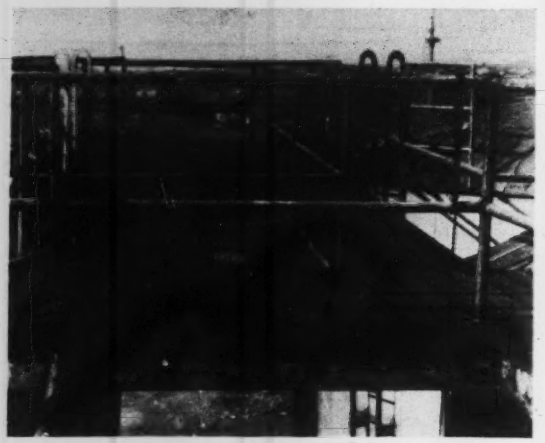
ENGINEERING NEWS-RECORD

Brigadier General
CECIL R. MOORE
Chief Engineer
n Theatre of Operations

WAR BABIES TO INDUSTRIAL GIANTS

PROFIT FROM PAST EXPERIENCE FOR POST-WAR EXPEDIENCE



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●

⟵ At Left Catwalks and runways of fireproofed wood adjacent to tanks in the alcohol plant of the Publicker Commercial Alcohol Co., Philadelphia, Pa.

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One of many U. S. Navy Hangars Fireproofed completely with PROTEXOL. (Off. U. S. Navy Photo)

The Week In Engineering and Construction

NGINEERING NEWS-RECORD • DECEMBER 23, 1943 • VOLUME 131 • NUMBER 26

New construction in 1943 was above most prewar years

Department of Commerce reports that this year's total will exceed $7.7 billion, nearly all of it being directly related to war activities. Road construction declines.

New construction in continental United tates will exceed 7.7 billion dollars in 943, the Department of Commerce an- ounced Dec. 16. This is a decline of 43 ercent from the record high of 1942, but still above the level of most prewar ears. The sharp decline has made pos- ible the release of considerable labor nd materials to other war activities.

As in 1942 nearly all construction was irectly related to the war effort. Two mponents alone, military and naval— 7 billion dollars—and industrial con- ruction 2.2 billion dollars—accounted r almost two-thirds of the 1943 total.

Although expenditures on other types construction such as residential, high- ays, public utilities, and miscellaneous ublic works were further curtailed in 1943, there is some evidence of a leveling off of the decline in these categories.

Public housing $680 million

Private nonfarm residential fell from 1.5 billion dollars in 1942 to .8 billion dollars in 1943 but has tended to flatten out in recent months. The severity of the 1943 decline reflects a practical cessation in the erection of non-essential housing. Public housing amounting to 680 million dollars in 1943 showed very little change from 1942.

The decline in highway construction to about 400 million dollars, the lowest volume since World War I, indicates the development of a backlog of highway needs that will greatly affect the volume of such construction in the postwar period. A similar backlog has been created in other public works.

The relatively mild decline of public utilities from 700 million dollars in 1942 to 500 million dollars in 1943 can be attributed largely to the ever-increasing wartime demands on our transportation and communication systems.

Government financed 80 percent

Since war work continued to be the main business of the construction industry, about 80 percent was financed by the government in 1943, just as in 1942. The evidence in recent months, however, suggests the beginning of a shift back from public to private financing. At the peak in the third quarter of 1942, publicly financed was about 85 percent of the total. Currently, it is running at about 70 percent. This shift away from public financing will probably be accelerated as the period of reconversion draws nearer.

NEW CONSTRUCTION ACTIVITY

Continental United States, 1942-43

(In millions of dollars)

	Total 1942	Total 1943
Total New construction	13,549	7,740
Total Private	2,877	1,619
Residential (nonfarm) (1).	1,460	804
Nonresidential	527	176
Industrial	315	102
All other	212	74
Farm construction	195	147
Public utility	695	492
Total Public	10,672	6,129
Residential	600	680
Military and Naval (2)...	5,206	2,743
Nonresidential:	3,723	2,138
Industrial (2)	3,583	2,089
All other	138	49
Highway	667	398
Other public	476	170

(1) Data for private nonfarm residential building were prepared by the Bureau of Labor Statistics.

(2) Based on data prepared by the Construction Research Section of the Bureau of Planning and Statistics of the War Production Board.

Press Assn. photo

Seabees construct a road in the Aleutians

Working under Arctic conditions, the Seebees with the aid of a bulldozer construct the final section of a 2-mi. spur road joining a main road at one of our bases in the Aleutians.

• • •

Superairport site chosen by Dallas city council

Love Field was adopted as Dallas' superairport site by the city council Dec. 5. An expansion program was approved that will mean the purchase of several hundred houses in the vicinity of the airport and the closing of several important streets. Runways will be extended to a length of 6,000 ft.

Colorado-Kansas water dispute settled by a Supreme Court decision

Litigation which began in 1901 is settled by an opinion which favors Colorado on all three points in controversy over diversion of the waters of the Arkansas River

The U. S. Supreme Court, in an opinion delivered by Justice Roberts, has put an end to litigation between the states of Colorado and Kansas over diversion of water from the Arkansas River. The opinion was the outcome of a bill in equity filed by Colorado in 1928, though original litigation began in 1901.

Three questions were settled by the court, which gave the opinion that (1) an injunction should be granted against further prosecution of the Finney County Association of Kansas against Colorado users of water, (2) the request of Kansas for an apportionment in second ft. or acre ft. cannot be granted, and (3) "Kansas has not sustained her allegations that Colorado's use has materially increased, and that the increase has worked a serious detriment to the substantial interests of Kansas."

The court declined to approve the master's recommendation that "dependable flow be allocated 925,000 acre-ft. to Colorado and 185,000 acre-ft. to Kansas, 150,000 thereof between April 1 and Oct. 1, and 35,000 between Oct. 1 and April 1 of each year, that is, five-sixths to Colorado and one-sixth to Kansas. With deliveries adjusted in this proportion upward and downward in accordance with annual flow."

"Colorado urges that our decision in *Kansas vs. Colorado, Supra,* amounted to an allocation of the flow of the Arkansas River between the two states. We cannot accept this view," the opinion says.

Negotiation suggested

The court stated that while it has jurisdiction of such disputes, "they involve the interests of quasi-sovereigns, present complicated and delicate questions, and, due to the possibility of future change of conditions, necessitate expert administration rather than judicial imposition of a hard and fast rule. Such controversies may appropriately be composed by negotiation and agreement, pursuant to the compact clause of the federal constitution. We say of this case, as the court has said of interstate differences of like nature, that such mutual accommodation and agreement should, if possible, be the medium of settlement, instead of invocation of our adjudicatory power."

"The lower state is not entitled to have the stream flow as it would in nature regardless of need or use," the court held. "If, then, the upper state is devoting the water to a beneficial use, the question to be decided, in the light of existing conditions in both states, is whether, and to what extent, her action injures the lower state and her citizens by depriving them of a like, or any equally valuable, beneficial use."

Reservoirs for storage

The opinion went on to say that "the critical matter is the amount of divertable flow at times when water is most needed for irrigation. Calculations of average annual flow, which include flood flows, are, therefore, not helpful in ascertaining the dependable supply of water usable for irrigation. That supply has, in Colorado, been supplemented by the extensive use of reservoirs for storage of flood waters and winter flows not usable or needed for irrigation. Though western Kansas affords sites for similar storage reservoirs, but one small basin has been constructed in that state."

* * *

Hal Hale named secretary of highway association

Hal H. Hale, Washington representative of the American Society of Civil Engineers, has been named executive secretary of the American Association of State Highway Officials with headquarters at Washington. He will take over his new duties at the opening of the new year. As executive secretary of the A.A.S.H.O. Mr. Hale succeeds W. C. Markham who was named executive secretary emeritus in December a year ago. Miss Helen Whitaker has been acting executive secretary for the past year.

Mr. Hale, a former city engineer of Knoxville, Tenn., is a native of that state and a graduate of the University of Tennessee in civil engineering in 192[illegible]. He became a designer in the Knoxville city engineers office in 1926, was made office engineer the following year and city engineer in 1933. He resigned in March, 1938, to join the staff of the Tennessee Valley Authority but later in the year joined the staff of the Portland Cement Assn. In November, 1941, he was engaged by the American Society of Civil Engineers as an assistant to the secretary and was located in Washington to represent the society there.

* * *

Fred Lavis in Venezuela as railroad consultant

Fred Lavis, consulting engineer, New York, has gone to Caracas, Venezuela, at the request of the Minister of Public Works of that country to advise on the operating problems of the Gran Ferrocarril. The latter is a 115-mi. railroad between Caracas and Valencia, formerly owned by German interests. The railroad was recently expropriated by the government of Venezuela following failure to operate after being placed on the black list by the American and British governments.

It is expected that this line will be combined with others to form a through system from La Guaira to Barquisimeto in the state of Lara. The project contemplates changing the gauge of the Ferrocarril Bolivar to conform to that (3 ft. 6 in.) of the other lines of the system.

* * *

Pennsylvania Turnpike bonds sold at 101.30

H. J. Van Ingen & Co., Inc., and associates purchased from the Pennsylvania Turnpike Commission on Dec. 9, a new issue of $1,500,000 3¾ percent bonds dated Aug. 1, 1968, at 101.30. The bonds, which are callable at 104 beginning in 19[illegible] and at lesser premiums in subsequent years, are reoffered at 103.

This flotation increases to $42,300,[illegible] the bonds outstanding for construction of the great toll highway from Harrisburg to Pittsburgh. The present issue will enable the commission to settle contractors' claims arising out of construction changes. It is part of a $3,000,[illegible] authorization, of which the remaining $1,500,000 will be utilized for betterments and improvements after the war ends.

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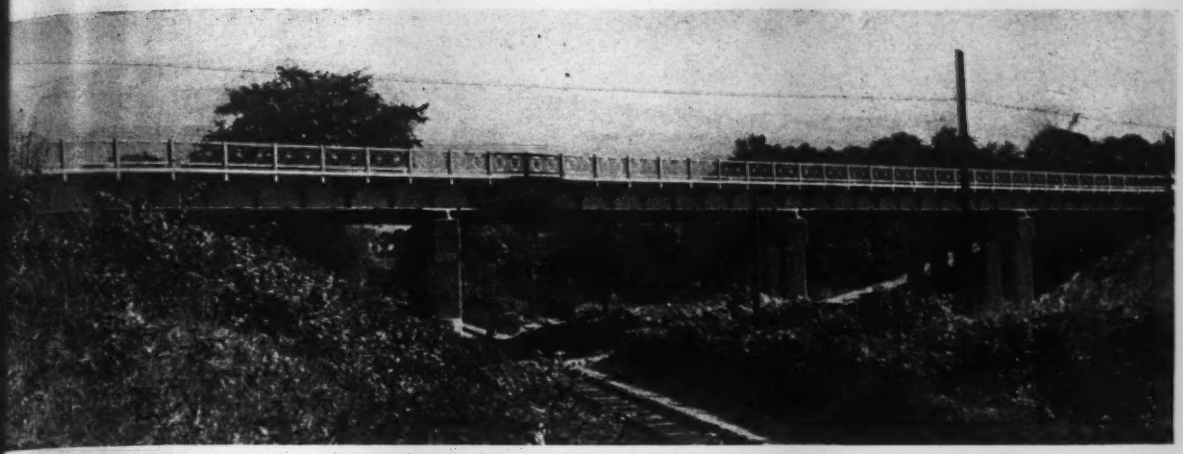


A 4-span, continuous steel-beam bridge carries Route 30-N over the B. & O. R. R. Span lengths are 72-90-90-72 ft.

Simultaneous construction of 2 bridges allows saving

Construction of two Ohio railroad grade parations about one mile apart re- ted in the rare condition of an under- ss at one site making available em- nkment materials for an overpass at other location. It is estimated that sim- aneous construction of the two separa- ns resulted in a saving of $20,000 on thwork alone.

Both projects are part of 1.7 mi. of new ane, divided highway. One bridge is a aration structure over the B. & O. R. west of Mansfield on Route 30-N. is a 4-span, 72-90-90-72-ft., continuous, el-beam bridge with spill-through utments. The concrete deck provides 26-ft. lanes separated by a 4-ft. divi- n strip and a 4 ft. sidewalk on each e.

The second project is an Erie R. R. way project about one mile west. It a two-span, through, plate-girder dge carrying two railroad tracks. Due to the skew of the crossing, the span of the girders had to be lengthened to 84 ft. At highway level in each span a 26-ft. roadway and a 4-ft. sidewalk are provided. The dividing strip was widened to 9 ft. to provide clearance at the center pier.

The $500,000 contract for the work was let in May 1941, and all materials were secured before they became critical. War conditions, however, hampered construction progress to a marked degree.

Lombardo Brothers Construction Co., Cleveland, Ohio, was the contractor. The Erie structure was designed by the railroad and the B. & O. overpass by the Ohio Department of Highways under the direction of W. S. Hindman, chief engineer, of bridges and railroad crossings. H. G. Sours is director, and G. R. Logue, chief engineer of the highway department. Construction was supervised by Vance T. Grimes, division engineer.

A double track of the Erie R. R. is carried over Highway 30-N by a 2-span, plate-girder bridge. Roadways are 24 ft. wide and center island 9 ft. Embankment materials for this grade separation came from another job a mile away.

lans made for Tri-State ighway through Indiana

esign and construction of that part of Tri-State Highway lying within In- a will start soon and proceed as dly as conditions permit, according Samuel C. Hadden, chairman of the way commission. The proposed high- through the Calumet area, linking iana with through highways in Illi- and Wisconsin, and eventually higan, is expected to cost $9,875,000. ignated as one of the state's major war highway construction projects, ill include one 17½-mi. section of -lane concrete pavement, separated parkway, with provisions made for itional lanes if they are needed.

lans also will include 8 railroad grade arations, 12 grade separations for ets and other highways, and 5 stream crossings. The road will join the Illinois highway system at Lansing, Ill., and its eastern terminus will be east of East Gary, Ind., where it will connect with U. S. highway 20. Eventually, said Mr. Hadden, it is expected to make an eastern connection leading to Detroit.

Each strip of concrete pavement in the dual lanes will be 22 ft. wide, separated by a 50-ft. parkway, on a 300-ft. right-of-way. Designated as an express highway, the new road will provide a route around Chicago to relieve some bottlenecks in the present system. It also will help relieve dangerous traffic congestion on existing routes in the Indiana towns of Gary, East Chicago, Whiting and Hammond.

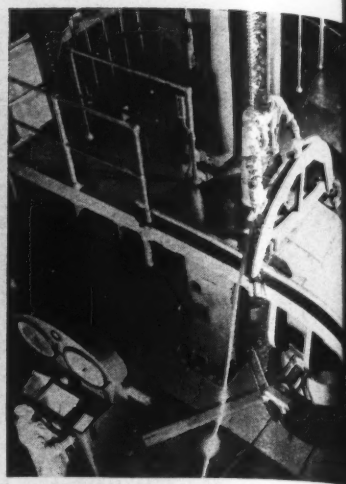
Wisconsin's 34-mi. length of the Tri-State Highway has been completed, and when Illinois completes its portion the road will be 72 mi. long in that state.

Large chlorine plant completed in West Va.

Completion of the largest chlorine plant every built as a single unit East of the Mississippi River was announced recently by the Columbia Chemical Division of Pittsburgh Plate Glass Company, operators, and the H. K. Ferguson Company of Cleveland and New York, industrial engineers and builders.

Located at Natrium, W. Va., in a section noted for its wealth of natural resources, the new plant was constructed on schedule and has been in operation for more than a month. It was financed by Defense Plant Corporation.

In addition to manufacturing liquid chlorine—used for hundreds of industrial applications for war material—the plant also produces caustic soda as a co-product. Exact capacities were not announced.



Aluminum Company marks twenty-five years of research

At New Kensington, Pa., near Pittsburgh, last week, the Aluminum Research Laboratories of the Aluminum Co. of America held open house to celebrate the 25th birthday of its central research organization, and to honor a quarter-century of service by its research director, Francis C. Frary. The quarter-century, which had witnessed phenomenal growth of a new material, has been characterized by steady reduction in price, new uses, and expanded horizons, all built on research. And with the military air forces dependent on aluminum, research since the war has been intensified. New high strength aluminum alloys have been developed, brazing methods of jointing have been perfected, and special coatings and finishes have been made available, to mention only a few of the achievements. Many of these will be useful in postwar civilian applications, it was pointed out at a banquet, where the speakers were Dr. Frary and E. R. Weidlein, director of the Mellon Institute.

In the above pictures, the 3,000,000-lb. ing machine at the Laboratories is shown in as an extrusion apparatus at the right, whil the left is the "research board of directo E. H. Dix, Jr., assistant director of rese and chief metallurgist; J. D. Edwards, assi director of research; Francis C. Frary, dire of research; H. E. Bakken, associate directo research; R. L. Templin, assistant director research and chief engineer of tests, from to right around the table.

Col. R. B. Lord honored for engineering work

Colonel Royal B. Lord, chief of staff, services of supply in the European theater of operations, has received the Legion of Merit for his preliminary planning of engineering operations of the North African campaign.

Colonel Lord, a graduate of West Point in the class of 1923, is a native of Worcester, Mass. He was at one time director of the Bureau of Public Relations in the War Department, and chief of operations for the Board of Economic Welfare. He is widely known as the inventor of the Lord portable pillbox.

Colonel Lord shared in the construction program for United States forces in the United Kingdom. A citation accompanying the award said, "The untiring energy, zeal and initiative displayed by Colonel Lord reflect great credit on the military service."

• • •

Power production soon to start at Denison Dam

Denison Dam on the Red River, the boundary between Texas and Oklahoma, has been completed and power production is scheduled to start in January, according to the Corps of Engineers, U. S. Army. Then the first of the five 35,000-kw. units will go into operation.

Construction of the $50,000,000 project, which is for flood control and power, has required two and one-half years. Most notable feature of the project is the size of earth fill dam. This 17,600,000-cu.yd. rolled-fill structure is believed to be the largest dam of its type in the world. It is about 15,000 ft. long and has a maximum height of 165 ft.

The work was carried out by the Denison District of the Army Engineers. The Guy F. Atkinson Co. built the main embankment, and D. F. Lylte Co. the outlet works. The George W. Condon Co. and John Kerns Construction Co. did the excavation for the outlet structures.

• • •

New sewerage system considered for Miami

The city commission of Miami, Fla., is considering a project, which may cost upwards of $10,000,000, to eliminate the present system of dumping raw sewage into Biscayne Bay and Miami River.

Financing plans involve validation of $10,000,000 or $12,000,000 in sewer bonds, but such engineering work as taking borings, preparation of plans and other details are expected to begin soon if the proper authorities approve the plan.

Most of Miami's area is not served by the sanitary sewage system. When the new system is constructed it will provide sanitary facilities for the whole city.

PAW reports progress on many petroleum plan

The Petroleum Administration War, discarding the secrecy it has h tofore maintained in regard to the s struction program for 100-octane gasol plants, has informed Engineering Ne Record that only two of the 70 pla constructed during 1942 and 1943 complete new refineries. These are Abecrombie-Harrison plant at Sweet Tex., which it is expected will be co pleted shortly after the first of the y and the City Service Oil Co.'s plant Lake Charles, La., now also under c struction.

The PAW has announced that of major projects scheduled for construc during 1942-43, 34 are now complete. the remaining 38 will be finished dur the first quarter of 1944. Twenty-s are scheduled for construction dur 1944. For these, engineering and s ground work has already been done.

The $900 million over-all construc program is being financed three-fou by the petroleum industry, and o fourth by the government. The aver cost of a catalytic cracker plant, wh is only one unit in a complete refine is $14 million. Such a plant is that cently completed at Baltimore by Standard Oil Co. of New Jersey. It 16,500 tons of steel, 100 miles of pipe and required 2,500,000 man-hours.

OUR ENGINEER GENERALS

Chief Engineer, European Theatre of Operations

BRIG. GEN. CECIL R. MOORE

y Saturday, Brig. Gen. Cecil R. Chief Engineer, European Theatre erations, sets aside several hours elebration. It gives him a lift, he nd best of all the only hangover eling of satisfaction and elation. ortunately, few other persons in the can indulge in General Moore's lar brand of dissipation, which s in turning over completed air- to the U. S. Army Air Forces. His ture is always the same. He con- ates the Engineer troops and their for a fine job of speedy construc- e reminds them that this is just many jobs that are in store for and then turning to an AAF Gen- e says, "It's yours. Take it away." wouldn't get a lift from conducting ceremony? But, as one observer y remarked, "If Hitler knew how more frequently this is going to he wouldn't like that fellow."

that's all right too, because every e likes him. And therein rests his and effectiveness as the top Engi- officer in the British Isles. His rity, furthermore, arises from recognizable ability as a troop nder and engineer, and from a self-effacing bearing that gives who meet him for the first time liate confidence in his integrity irness.

cers serving under him in E.T.O. ey were never happier in their a condition that is enhanced by r of his qualities—administrative . He assigns responsibility and ts the officer strictly alone to stew details of carrying it out. As a uence, his desk is always as clean issen hut roof.

when he leans back in his chair ts his feet up on this desk, it is as it were covered with papers from he is reading figures and details y Engineer operation in the United om. Always seeking information, s you what you have seen recently. ell him about a problem with the ates on a certain job, about the rival of some needed equipment on r, only to find that he knows all about it, even though you may have just visited the jobs in question. You come away with the feeling that no one has a better right to hand over a completed airfield to the Air Forces than General Moore. After all it was his. He built it.

One can find much that accounts for General Moore's present character and

Brig. Gen. Cecil R. Moore

ability in his background and training. An outstanding student, he was first in his class during all four years at Harrisonburg (Va.) High School, and he held the same honors during four years at Virginia Polytechnic Institute, which he left in 1917 with B.S. and E.E. degrees. Three months later, as a result of competitive examination, he was commissioned in the regular army as a Second Lieutenant in the Coast Artillery.

He did not get to France until 1918, but he saw service then as a battery commander, and he didn't get back to the States until 1922. Going to England in 1919 as adjutant on the staff that was handling U. S. Army students in British Universities and the U. S. Forces in the British Isles, he apparently found this "chairborne" assignment too tame, and on July 1, 1920 transferred from the Coast Artillery to the Corps of Engineers where he has remained ever since.

General Moore's father had been an architect and building contractor, so that, coupled with his own engineering education and his troop experience, he came to the Corps of Engineers well equipped. In Germany, where he remained from 1920 to 1922, he was company commander in the 1st Engineers and later in the 16th Engineers. Returning home, he entered upon a career that kept him almost constantly with troops for the next 15 years, except for the periods when he was attending the various Army schools. There were, however, intervals during which he had a hand in construction matters, such as, for example, when he had charge of the emergency ponton bridge over the Winooski River at Burlington, Vt., in the disastrous 1928 flood, and when he served as assistant to the Chief of Engineers in Washington between 1930 and 1933.

It was from 1938 to 1942, however, that General Moore showed that his abilities as a construction engineer were quite as exceptional as those he had consistently displayed as a soldier. During that period, as District Engineer at Portland, Ore., he was in charge of the flood control dams for the Willamette Valley in Oregon and of the Mill Creek Dam in Washington, he operated the Bonneville power development on the Columbia River and built the extension to the powerhouse, and he constructed jetties and other works at the mouth of every major stream that empties into the Pacific from Canada to California. Cottage Grove and Fern Ridge Dams were among the outstanding structures that he pushed through to completion in time to start on the huge military construction program of 1941-42, which dotted the Pacific Northwest with airports, depots, camps and hospitals.

For a few months in 1942, he was Engineer for an Army Corps at Fort Lewis, Wash., and was then ordered to England as commanding officer of the

(*Continued on page* 13)

★ ★ ★

An Adventure on the Amazon

By Edward J. Cleary
Managing Editor, Engineering News-Record

This is the ninth and concluding informal report received from Mr. Cleary describing some of his experiences in a 16,000-mile field trip. Preceding letters were published in news sections of the issues of Sept. 30, Oct. 7, 14, 21, Nov. 4, 11, 25, and Dec. 2.

Belem, Brazil—Having demonstrated (to myself, at least) the virtues of "gin tonica" as a safeguard against malaria, I was mentally fortified for my trip to the Amazon basin. Malaria was the least of the hazards, however, if you believed some of the stories told around Rio. But since the Amazon is at least 1,500 miles distant from this city you must expect to hear tall tales indicating that the snakes are bigger, the animals more ferocious and the Indians wilder than any other place in South America.

I suppose I didn't get far enough into the jungle to verify this, because the worse animal hazard with which I came in contact was ants. They ranged from tiny fellows that packed a sting all out of proportion to their physique, to "king" size monsters over an inch in length, the poisonous varieties of which are said to carry as much venom as a snake. These pests, like mosquitoes, are ubiquitous and once when I sat on a stump I promptly discovered what it means to "have ants in your pants."

But I'm getting ahead of my story, which begins in Rio. H. G. Baity, chief engineer of the health and sanitation division of the Coordinator's office in Brazil, had engaged passage for us on a local airline that flew to the north by an interior route via the San Francisco valley. This gave us an opportunity to see the valley, which is hailed as the future "TVA" of Brazil because of its hydroelectric power and navigation potentialities, and at the same time we became the reluctant participants in the game of bringing down a light plane in strong cross-winds.

The four landing fields in this 1,300 mile hop boasted only a single runway each, and in every case the wind on this day was at right angles to what it should have been. How we got down and then up in this little plane, which carried a lot of freight besides ourselves, with the wind doing its best to turn us topsy-turvy cannot be described by me because I took refuge each time by keeping my eyes closed.

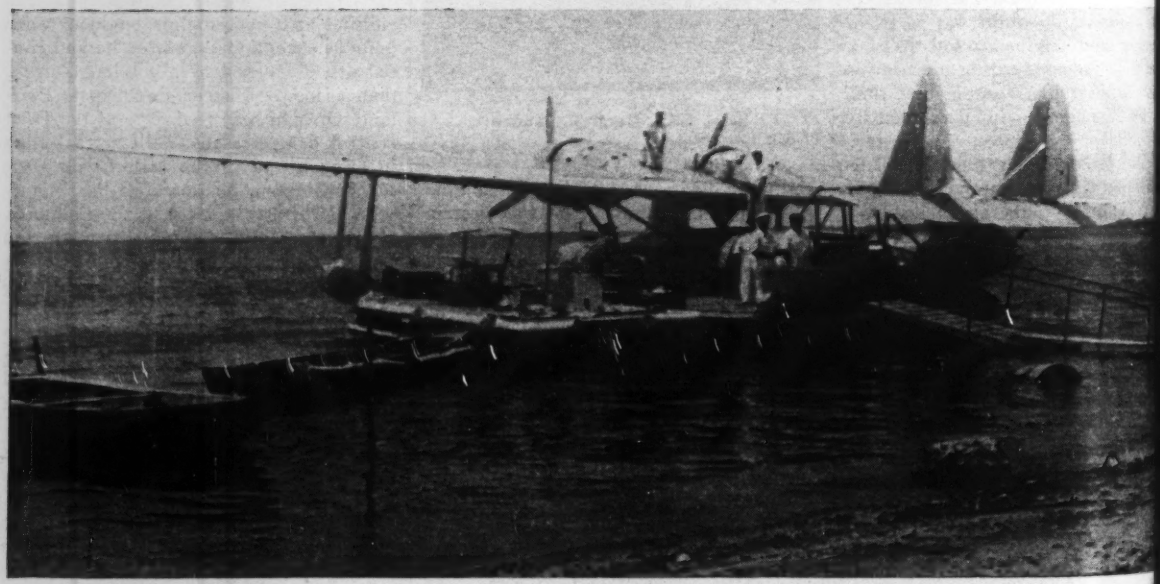
"That was a swell exhibition of flying skill," said one of the officers at a U. S. Army airbase, where we made a final and almost disastrous landing. "You know," he continued, "those Brazilian pil the most daring in the world. Only hours ago an R.A.F. flyer who had c the ocean came over the field and radioed that he would rather push few hundred miles than try to m landing in this wind."

All of this proved how necessary to build additional runways at this properly oriented with regard to the And I found a big contingent of the Army engineers hard at work on the struction of these new facilities to su ment those provided by Brazil.

A few days later we boarded transport plane for an uneventful mile journey to Belem, at the mou the mighty Amazon.

Engineering in the jungle

At Belem we met Dr. Kenneth Wa a medical doctor as well as an eng who is known from one end to the of the Amazon basin. On leave of ab from his post as medical director o Ford Rubber Plantation to aid th ordinator's office on health and sani activities, he had undertaken to ar



Only the bare essentials are provided for servicing the "baby" clippers that furnish speedy transportation up and dow Amazon valley. This is the landing stage at Santarem. The wings of the plane are painted red to facilitate identificat searching parties should it be forced down in the jungle.

Balty, chief engineer of the American sanitary mission ...ail, relaxes in his hammock while the launch chugs its ...p the Rio Tapahoz. Dr. Balty is on leave of absence ...his post as professor of sanitary engineering at the ...rsity of North Carolina.

Civil engineer and medical doctor, Kenneth Waddell is one of the best known men in the Amazon basin. Son of a famous missionary, he was educated in the States, but has spent all his time in Brazil. He is now engaged in health and sanitary work for the American sanitary mission.

...r further travels to the interior. ...ore starting, however, Dr. Waddell ...d me to see some engineering work ...ygone-day—a scheme for harness...e tide for the production of power ...t a century ago. Dr. Waddell had ...ered this in his perambulations ...h the jungle, and in order to reach ...ace we traveled upriver for several ...in a fast yacht. At the mouth of a ...creek almost completely hidden by ...jungle growth we transferred to a ...outboard-driven boat.

...ntually we stopped at a point ... Dr. Waddell said, "This is it." I ...thing but the jungle. But when we ...d through a dense tangle of vines ...ther vegetation he began to point ...e ruins of brick foundations. Then ...olded the story: This was the cen... a colonial sugar plantation and the ... a rum distillery. In order to oper... rolls for crushing the cane as well ...vide power for other simple ma... the owner ingeniously took ad...e of a 12 ft. change of tide in the

...rge impounding basin was built ...nt to the creek and fitted with ... At high tide the gates would be ... thus storing the water until the ...f the creek receded with the ebb... Then the stored water was released ... channel leading to an undershot ...heel. The size of the basin in rela... the housing for the wheel indicated ...wer could be obtained over a 2-3 ...riod. And, of course, with two tide ...s a day, this provided a substantial ... help in making rum.

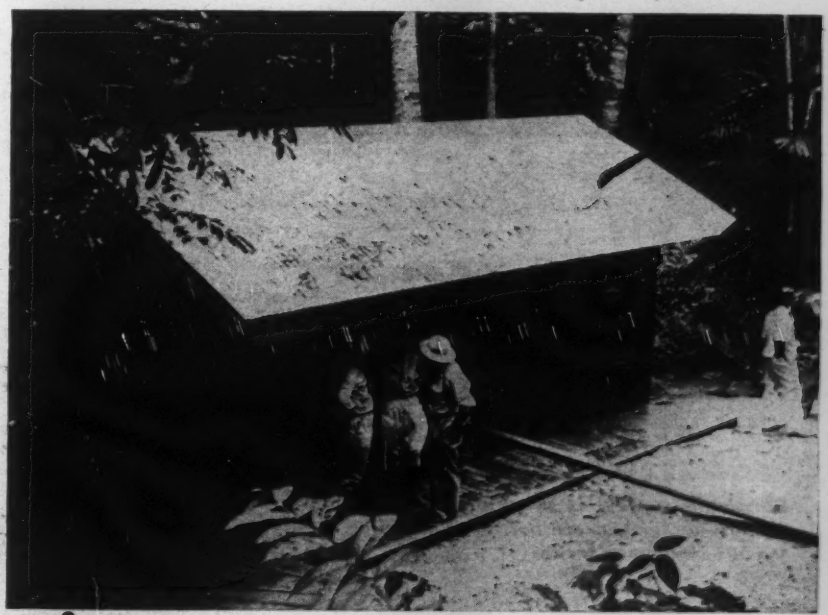
...e from its engineering interest the ...o the old plantation, completely overgrown and enveloped with tropical vines and trees, provided a dramatic demonstration of the power of the jungle in effacing the inroads of civilization.

Surveyors and savages

At Belem I also had time to visit the office of the Brazilian Commission for the Demarcation of Boundaries, now engaged in the precise surveying and establishment of the Brazilian-Colombian border line. Dr. L. S. Martins, chief of operations in the northern sector of Brazil where few white men have ever ventured, told me of some of the difficulties that his field parties face in charting this wilderness.

Each party, comprising anywhere from 45 to 70 men, is equipped to live and work away from civilization for many months at a time, their only contact with the office being via short wave radio. Not so long ago from the base camp of one of the parties working 600 miles from Manaos, on the Rio Demeni near the Colombian border, an urgent message was received saying that savages were attacking.

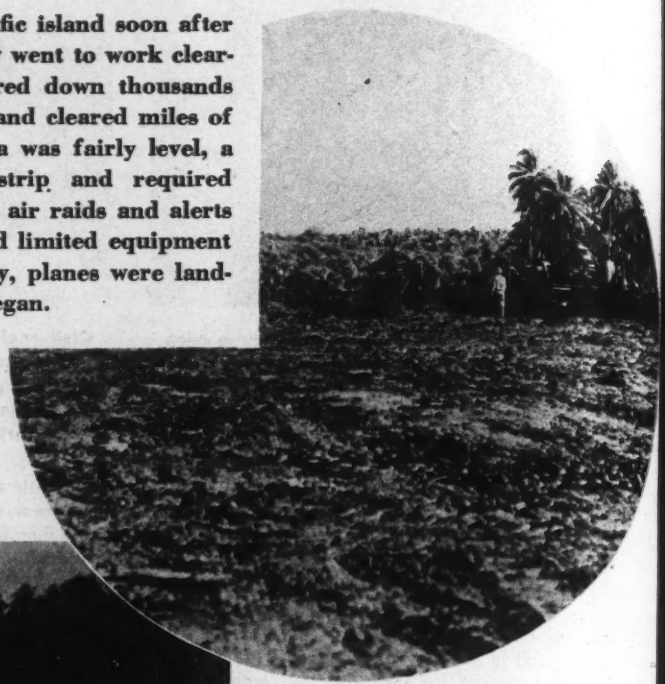
(*Continued on page* 12)



The finest water supply within a 1,000-mi. radius is pumped from this jungle spring on the Ford rubber plantation at Belterra in Brazil.

Seabees rush jungle airfield to early completion

• The Seabees landed on a South Pacific island soon after the first assault units. Immediately they went to work clearing the selected site. Bulldozers battered down thousands of palm trees at the rate of 500 a day and cleared miles of tangled underbrush. Although the area was fairly level, a deep gully traversed the proposed strip and required 72,000 yards of fill. Despite numerous air raids and alerts in the early stages of the operations and limited equipment that often made improvisation necessary, planes were landing and taking off 21 days after work began.



View of the proposed air strip, at right, after bulldozers completed job of clearing.

Runway down to grade. Crushed native coral to the depth of 8 in. is spread as surfacing. Coral cures to firm cement-like surface.

View of completed section of air strip. Seabees spread coral on unfinished portion in the background.

Completed runway, as shown at right. Seabees in background are borrowing material for fills in another section of strip.

onstruction Communiques

Engineering news from the battlefronts

ed States—In time for Christmas, a chment of 496 members of the 54th struction Battalion of the U. S. Navy ved in New York Dec. 17 aboard a rty ship after 10 months in the Medi- anean area, where some of them par- pated in the invasions of Sicily and y. The Seabees were among more n 1,000 members of the battalion who rned to various U. S. ports for Christ- furloughs.

hey told of anti-tank mines exploding er amphibious trucks they were rid- of night hydrographic surveys in the or of Salerno before Allied troops cked that port, of building causeways els under fire of German planes, of king lemonade made of "powdered n till hell wouldn't have it" and of ing forward to a Christmas meal of and ham and eggs.

ll had participated in the prepara- s for invasion of Sicily.

he first ashore was Commander W. L. hart, of the Civil Engineers Corps, .N.R., Webster Groves, Mo., contrac- who commanded the battalion in th Africa. Behind him was Gunner's e First Class John Ingram, of San ncisco, wearing a German aviator's h and carrying in his sea bag a red man tank flag bearing a swastika.

ccording to Paul Beckley of the New k *Herald-Tribune*, the oldest was rles E. Bixby, fifty-two years old, of nta, the youngest James Titherington, teen, of Dunsmere, Cal. The homes 0 percent of the men are on the west st. After disembarking, they entrained Camp Endicott, Seabees base at Davis- , R. I., whence they will soon leave on lay furloughs.

les—"When Naples was finally taken Oct. 1 it was only the first step toward ployment of the port," cabled Mark Watson, Baltimore *Sun* correspondent. ips had been burned at the piers sunk in slips and channels. Decks road approaches were a fearful le of dynamited and burned struc- s, which barred the use of the whole rfront.

The work of restoring the harbor to ulness started just as soon as the y was ejected. The first large vessel ollow minesweepers into the harbor ied engineering equipment which the had been holding off shore for tly that purpose. When Allied army neers began the enormous job of ring piers and approaches of debris, ed navy salvage men began clearing s and docks and channels.

Obstructions light enough to be re- ed were hauled to one side for sal- vage or out to deep water and sunk. Obstructions too large for this handling were dynamited by divers and thus re- duced to size that could be handled.

"Countless explosions, which worried Neapolitans and which they ascribed to enemy delayed action mines, were actu- ally these harbor clearing blasts set off by our own engineers.

"Work was on a 24-hr. schedule, for almost the greatest need of General Clark's supply forces was to get a smooth, rapid flow of supplies to a point the shortest possible distance from the front line."

England—Canadian army engineers have left permanent marks on the English countryside through their wartime activi- ties, Brig. James L. Melville, former engineer commander who now is chair- man of the Canadian Pension Commis- sion, said Dec. 9.

The marks include arterial highways, by-pass roads and airfields. The Cana- dian sappers also made important con- tributions to exploitation of Britain's mineral resources by operations in the tin mines of Cornwall.

For the engineers these jobs made life a great deal happier during the long period of waiting and training for an invasion or offensive.

Villages or towns with narrow streets on main trunk highways were serious bottlenecks to through traffic and would have tied up military movement in event of invasion. The job of the Canadian engineers was to construct new roads to by-pass them.

The speed with which one special job was carried out by a Canadian road con- struction company amazed the British contractor and government department concerned. A large excavation more than 60 ft. deep had to be made in a subsoil of sandstone and blue clay. It looked like many months for the contractor's pick-and-shovel gang.

Canadian tractors, bulldozers, scrapers and pneumatic drills were moved on to the job, three eight-hour shifts were started and in two weeks the excavation was complete.

New. Georgia—"Within the month after this Argonne-like area was wrested from the doomed Jap garrison, Munda has undergone an almost unbelievable change," says Staff Sergt. William S. Frank, a Marine Corps combat corre- spondent.

"Modern two-lane, hard-packed coral roads have replaced the trails that jeeps used with so much difficulty during the first few days of the offensive.

"Screened-in mess halls, kitchens and hospitals have been built, insuring the health of the marines, soldiers, and sail- ors who had eaten in open, fly-covered kitchens, and had their wounds dressed under hastily-pitched tarpaulins during the fight for Munda.

"Where once marines and soldiers spent sleepless nights in rain-soaked fox- holes, tents with coral and wooden decks have been set up and the men sleep peacefully on canvas cots except for oc- casional harassing raids at night.

"Most of the transformation was wrought by hard-working, hard-fighting Navy Seabees and Army engineers who were in the thick of it from the time the first beachhead was made on New Georgia.

"The Seabees who landed at much- bombed and shelled Lambeti plantation the day after the inoperative strip was secured brought with them steam shov- els, bulldozers and earth movers. The field, blasted out by action by our Air Force, was soon put right by the versa- tile Seabees."

Attu—Construction at Attu, under di- rection of Col. George J. Nold, engineer, Alaska Defense Command, is progressing rapidly according to word received at the Seattle office of the army engineers which is performing special construction services for Alaska projects.

In seventeen days under fire at Attu, the army engineers completed more miles of road than the Japanese had in the eleven months they were engaged on their Attu project.

Of the Jap work at Attu, Colonel Nold says:

"The Japanese quite evidently devoted an enormous number of man-hours to back breaking hand labor in trying to build an airfield, a job which could have been done in a few days by engineer troops with the aid of the machinery with which American forces are supplied. At the same time, American engineers would have produced a far better job."

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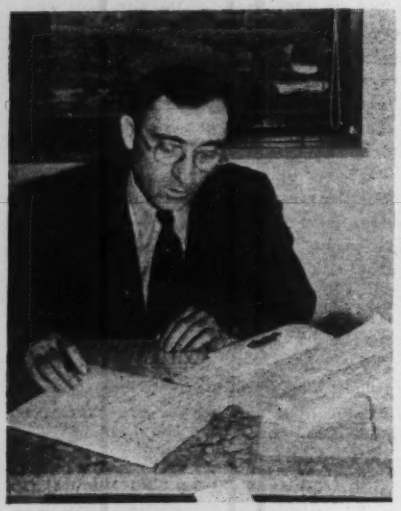
More cargo, less revenue on Texas highways

Increased weight of cargo carried over Texas highways without a corresponding increase in tax revenue from that source was noted in a recent report from the Texas Highway Planning Survey.

In 1937, the analysis said, the average weight of a truck and load traveling in Texas was 9,570 lb. In 1943, disregard- ing military vehicles, the average was 14,022 lb., an increase of nearly fifty per- cent. The report said that the increase might have been more if commercial truckers had been able to obtain new trucks large enough to carry the full legal load.

MEN AT WORK



Postwar planning gets the attention of B. E. CLARK, chief engineer of the Oklahoma State Highway Department.

CAPT. W. L. BOLAND, area engineer for the U. S. Engineers, Tinker Field, Oklahoma City, describes an interesting operation.

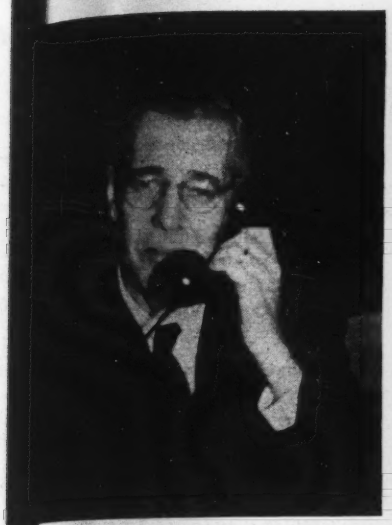
As general superintendent for Fehlhaber Pile Co. in raising the L & N R. R. bridge at Danville, Tenn., JOSEPH DEVIDO is mighty busy these days.

Difficult but interesting work of JOHN STROM, senior highway engineer, Arkansas highway department, is reconstruction of damaged bridges.

J. D. CHADWICK, assistant maintenance engineer with Missouri highway department at Jefferson City, inspects Big Piney River Bridge work near Fort Wood.

Recent big job of W. B. FOWLER (left), city engineer of Memphis, and T. E. MAXSON, office engineer with the city, was construction of 10 miles of sewer on a rush schedule.

Revision of Arkansas state highway standards holds the interest of W. W. MITCHELL (left), Arkansas director of highways, and V. E. SCOTT, assistant director.

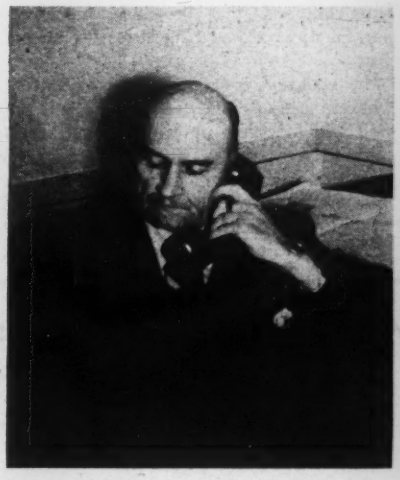


A telephone call interrupts the editor's discussion with JOHN D. STEVENSON, chief engineer of the Pittsburgh, Pa. department of public works.

With transfer of Col. A. M. Nielson to foreign duty, LT. COL. G. R. SCHNEIDER (above) was named acting district engineer, U. S. Engineers, Little Rock.

Speed and more speed is the order at Norfork Dam, in northern Arkansas where Capt. JOHN L. KEMPLE, is resident engineer for the U. S. Engineers.

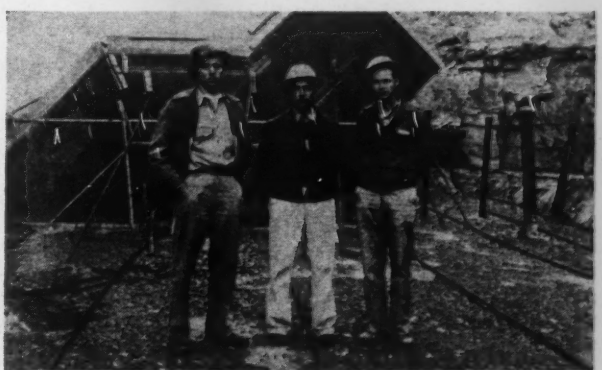
Few men are more familiar with the state highways of Missouri than C. W. BROWN, for the last seven years chief engineer of the Missouri State Highway Department.



Formerly project engineer at Tinker Field, Oklahoma City, VIRGIL D. ALDEN is now chief engineer of utilities for the Post Engineer's office on that project.

An engineer of maintenance with the State highway department, REX M. WHITTON is one of the busiest men in Missouri these days.

Key men on construction for Oklahoma highway department are left to right: R. S. LIGGETT, office engineer; JOHN STOBAUGH, construction engineer and N. B. TURNER, assistant construction engineer.



Norfork Dam work gets attention of R. F. HOUSE, construction chief, and R. E. WHITLA, foundation engineer, U.S.E.D.; and J. R. BARRY, office engineer, Utah Construction and Morrison-Knudsen.

An Amazon Adventure

(*Continued from page 7*)

The field doctor and radio operator, who were alone at this camp, fought off the savages for 10 days. They killed a half dozen of the attackers and themselves were wounded several times with arrows. Following their radio call for aid it took twenty days for reinforcements to reach the camp from Manaos!

To dispel any doubts about its encounters with savages, the Commission maintains a museum at Belem. Here one may see an ominous collection of blow guns, poisoned darts and arrows and some huge bows that have been brought back from survey expeditions.

Belem to Belterra

From Belem to Santarem, 500 miles up the river, was a 3½ hr. air trip in a Sikorsky "baby" Clipper operated for the Rubber Development Corp. I thought the silver-colored plane was a bit gaudy because the wings were painted a bright red. This was not done for aesthetic reasons, I learned later, but served the very practical purpose of making it easier for a searching party to spot the plane from the air should it be forced down in the green jungle.

Not until you get in the air do you fully appreciate the size of the mighty Amazon. It is not one river, but a whole series of parallel streams separated by long islands. Across the mouth these are said to span a distance of 180 miles. The waterways are navigable for a length of two thousand miles by 3,000-ton ships.

At Santarem, where Dr. Waddell was officially greeted by the mayor and a delegation of townspeople, we boarded a launch that was to take us up the Rio Tapahoz to the Ford plantation. Make no mistake, the Brazilians like their rivers big; the Tapahoz, which is only a tributary to the Amazon, is 12 miles wide at its mouth!

Unlike the yellow, mud-laden Amazon, the Tapahoz is a "black water" river that runs clear and deep. Its bed is said to be a drowned valley, the depth of which is as much as 150 ft. Because of its size, large ships can make their way directly to the Ford estate.

When we arrived at the Ford wharf just about nightfall, there was a flurry of excitement along the waterfront. A hydroplane had come in just before us with an emergency hospital case; the patient, a North American doctor from Manaos, needed immediate attention for an appendix that was ready to rupture. It was only here, at Belterra—500 miles from Manaos—that he could reach expert medical aid and facilities for an operation.

In striking contrast to this situation wherein a man's life was at stake, was my visit which was to obtain information on plantation activities with particular reference to engineering. Regardless of their mission, however, it was evident that all who stop at the Ford plantation receive the hospitality and consideration that their needs deserve. Thus, while we [illegible] down to a magnificent dinner in the [illegible] house, the affected doctor received equal good, if not as pleasant, attention in [illegible] nearby hospital.

Engineering and construction activities on the plantation, as well as the fascinating business of clearing the jungle and growing rubber trees will be told in another story. Only in this way can some measure of justice be done to D. H. Stallard and Archie Weeks, acting manager and construction superintendent, respectively, of the plantation.

What is pure water worth?

However, I can't forego mentioning my reaction to the unlimited availability of pure water at this place. Few people will understand me when I say that I felt like going down on my knees before the water tap in thanksgiving for what-I was to receive. Everybody in the United States takes it for granted that when they turn a tap there will gush forth an abundance of water the quality of which is unquestioned.

I've been matter-of-fact about it, too. But if you really want to develop an appreciation of what it means to be able to draw pure water from a tap whenever the fancy strikes you, go away for three months where you can't do it.

After this experience you will then do exactly what I did at the Ford plantation —give fervent thanks and then drink and drink and drink until your belly is about to burst.

Lowered stream flow, ground-water and storage in November

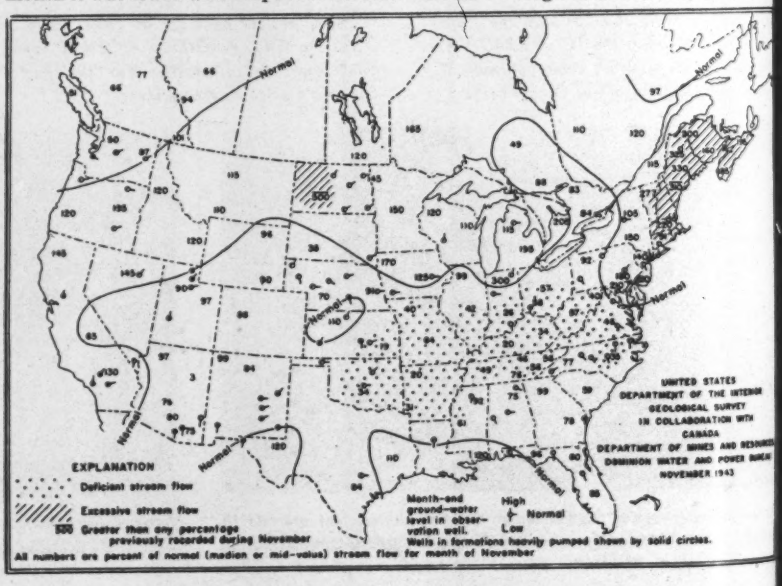
Deficiencies in precipitation, which have now continued for from 3 to 4 months except in the northeast, are being reflected in subnormal stream flow, lowering groundwater levels, and diminishing natural and artificial storage in the western Canadian Provinces, Washington, and in the southern two-thirds of the United States.

Artificial storage is being heavily drawn upon, and in general the water-supply outlook for the immediate future in these areas is unsatisfactory.

Stream flow, lake levels, and ground storage continue normal or above in most of central and eastern Canada (except in eastern Ontario), New England, Middle Atlantic States, Michigan, northern Indiana, Wisconsin, Minnesota, Iowa, North Dakota, Montana, Idaho, Oregon, California, and northern Nevada. Storage reserves in these areas are being well maintained, and the outlook for continuation of normal or above-normal water supplies is favorable.

Regional groundwater storage is now generally less than it was a year ago and the immediate outlook for stream flow and shallow-well supplies that are furnished by this storage is therefore correspondingly less favorable. During November storage continued to decrease in most localities and at the end of the month it was lower with respect to normal than it was at the very end of October.

Subnormal stream flow of drought severity was prevalent in a 350,000-square-mile area extending from Oklahoma to Virginia and North Carolina.



Brig. Gen. Cecil R. Moore

(*Continued from page* 5)

Eastern Base Section, European Theatre of Operations. Three months later, he was made Chief Engineer, E.T.O., and on March 26, 1943 was raised in rank from colonel to brigadier general.

General Moore was married in 1929 to Miss Esther Whitman of Chelmsford, Mass., and has a 9-year-old son and an 8-months-old daughter.

It is typical of the man that he still sometimes says, when answering the phone, "This is Colonel Moore," while at the same time his men maintain that it was the most natural thing in the world for them to refer to him as "General" immediately the star was pinned on his shoulder. It is as General Moore that our enemies will long remember this 49-year-old officer, for, as Chief Engineer of the European Theatre of Operations, he is counting the days until he can be completing on the continent the same kind of construction jobs that he now likes to celebrate in the British Isles.—*W. G. B.*

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"Blueprint Now" drive material is available

To add further stimulus to the "Blueprint Now" campaign conducted by the Water and Sewage Works Manufacturers Association in the interests of post-war planning, promotional material including a brochure and gummed stickers have just been made available. Copies will be sent to manufacturers, municipalities and state sanitary engineers.

The sticker

Reproduced above is the form and text of the gummed stickers, which are 1¼ in. square and printed on paper the color of blueprint stock. The stickers, for use on envelopes, letterheads, etc., may be obtained in quantities at very moderate cost from the Committee on Water and Sewage Works Development, E. L. Filby, chairman, Suite 2110, 500 Fifth Ave., New York, 18, N. Y.

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Canadian community gets free water for Christmas

Residents of Kamloops, B. C., will have their December water bills cancelled as a Christmas gift from the municipality. The town, which operates its own water department, has for many years shown a surplus, but hitherto the "profit" has been turned in for general reserve.

JOBS OF THE WEEK

HOUSING FOR WAVES, Washington, D. C.

Bureau of Yards & Docks, Navy Dept., Washington, D. C., has given a contract for constructing housing for Waves at West Potomac Park, to Ross Engineering Co., Washington, D. C., at $846,900.

BARRACKS, Alameda, Calif.

Bureau of Yards & Docks, Navy Dept., Washington, D. C., has given a contract for additional barracks, bachelor officers quarters, and subsistence building, to Johnson, Drake & Piper, Oakland, Calif., at $538,880.

COVERED STORAGE, San Francisco, Calif.

Ford J. Twaits Co., Los Angeles, Calif., and Morrison-Knudsen Co., Inc., San Francisco, Calif., have been awarded a contract for covered storage, at Isalias Creek by Bureau of Yards & Docks, Navy Department, Washington, D. C., at $1,033,000.

BARRACKS and HOUSING, Patuxent River, Md.

Bureau of Yards & Docks, Navy Dept., Washington, D. C., awarded a contract for enlisted men's housing and facilities, at Naval Air Station, to Harwood-Nebel Construction Co., Washington, D. C., at $1,836,000; also for barracks, mess hall and utilities to Psaty & Fuhrman, Inc., New York, N. Y., at $601,000.

RUNWAY EXTENSIONS, Robins Field, Ga.

U. S. Engineers, Savannah, Ga., awarded a contract for runway extensions at Robins Field to H. E. Wolfe Construction Co., St. Augustine, Fla., at $632,421.

GRADING, DRAINING and PAVING, Martinsburg, W. Va.

Civil Aeronautics Authority, Jackson Heights, N. Y., received the lowest bid for grading, draining and paving a municipal airport from Lane Construction Co., Meriden, Conn., for Schedule 1, preparing site at $524,465; Schedule 2, Alt. 1 $409,000; Schedule 3, Alt. 2 $314,724.

CANTONMENT ADDITIONS, Fox Hills, N. Y.

U. S. Engineers, New York, N. Y., received the lowest bid for cantonment addition from Thompson Starrett Co., Inc., New York, N. Y. The estimated cost is $2,000,000.

HOUSING, Poulsbo, Wash.

Public Housing Authority, Seattle, Wash., opened bids for constructing 200 temporary housing units. Lease & Leigland, Seattle, were the lowest bidders on job at $539,000. Naramore, Bain, Brady, Johnson & Duffy, Seattle, Wash., are the architects.

DREDGING and PLACING FILL, East Boston, Mass.

Department of Public Works, Commonwealth of Massachusetts, Boston, awarded a contract for dredging and placing 4,000,000 cu. yd. material by hydraulic process for constructing embankments for proposed runways for General Lawrence Logan Airport, to Gahagan Construction Co., 147 Remsen St., Brooklyn, N. Y., at $909,600.

HOUSING, Warren, O.

Eastern States Homes, Inc., New York, N. Y., awarded a contract to build 87 two-story, basement dwellings, including grading, sewer and water lines and concrete sidewalks to M. Shapiro & Sons Construction Co., New York, N. Y. The estimated cost is $1,000,000. Junior W. Everhard, Cleveland, O., is the architect. Alexander D. Crosett & Associates, New York, N. Y., are the engineers.

Note—Additional bidding and contract news on many projects large and small appear in the Construction News section beginning on page 15.

Arizona section A.S.C.E. bargains for its members

The Arizona section, American Society of Civil Engineers, on Nov. 27 moved to place itself in a position to act as a bargaining agent for its members when serving as employees.

This step was taken in line with recommendations of the board of direction of the national organization, because under the present federal labor regulations engineers are being forced to affiliate themselves with other organizations for pay and hour bargaining purposes, whether they desire to do so or not.

A correction

In our report of the annual meeting of the American Association of State Highway Officials (*ENR* Dec. 9, p. 861), W. Vance Baise, state highway engineer of North Carolina, was quoted as saying that there would be $50 billion of surplus maintenance and construction equipment after the war. This was in error. What Mr. Baise said was that the "surplus of war equipment and supplies, in a multitude of items, will have a cost value of 50 billion dollars." He included all kinds of equipment and supplies in his total, not just construction equipment.—THE EDITORS.

OBITUARY

Charles Evan Fowler, whose death in Seattle at the age of 76 was noted briefly in *ENR*, Dec. 9, p. 867, was well known in the bridge building field for over half a century, chiefly as a promoter of large bridge projects such as the Bay Bridge at San Francisco and the Ambassador Bridge at Detroit. His early bridge work was in the bridge department of the Hocking Valley R. R., after which he was for a brief time with the Motherwell Iron & Steel Co., the Berlin Iron Bridge Co., and the Indiana Bridge Co. In 1891 he became chief engineer of the Youngstown Bridge Co., which position he held until 1898 when he opened an office as a consultant in New York. Subsequently he participated in the construction of the Williamsburg Bridge at New York and in reconstruction of the arch bridge at Niagara Falls. He prepared the first designs for a combined railway and highway bridge over the Detroit River at Detroit, but the bridge was redesigned when the railroad features were eliminated.

Joseph A. Rueter, 83, veteran contractor of Burlington, Wis., for 50 years, and a Racine County supervisor for 22 years, died Dec. 12.

Capt. Leonard M. Cox, 73, civil engineer and retired U. S. Navy captain, died Dec. 12 in St. Helena, Calif. He entered the engineering corps of the U. S. Navy in 1899; built the first floating dry dock ever constructed by the U. S. Navy, the "Dewey," which was towed to the Philippines and was in constant use there up until the time of the Japanese invasion, for which feat he won the highest award given by the American Society of Civil Engineers, an award known as the "Norman Medal." He also made the first American survey of the island of Guam. He served as Public Works Officer of Mare Island Navy Yard from 1919 until his retirement in 1923.

Joseph G. Kenan, 61, civil engineer, died in Upper Sandusky, Ohio, Dec. 4. Mr. Kenan began his career with the Pennsylvania Railroad and followed his profession in Chicago, Valparaiso, Ind., and at Cleveland, where he operated the J. C. Kenan Construction Co., retiring eight years ago.

Harry Clyde Doverspike, 45, with the U. S. Engineers, Cincinnati district, died Dec. 6. Mr. Doverspike was a captain of army engineers in World War I. He served with the engineers in Pittsburgh, Huntington, Zanesville and Cincinnati for approximately 18 years. He had been in charge of specifications for military and civil works in the Cincinnati district for six years.

L. C. Dupuis, division engineer for Canadian National Railways at Levis, Que., died there Dec. 7.

John Bernard Wain, 54, assistant chief land surveyor for the Canadian National Railways, died at Montreal on Dec. 10.

Gardner Rogers, 63, of Merion, Pa., engineer and grandson of the late Thos. Nickerson, one-time president of the Atchison, Topeka & Santa Fe Railroad, died Dec. 18. He was graduated in 1902 from Massachusetts Institute of Technology. He became associated with Stone and Webster of Boston and New York in an engineering and executive capacity, and in recent years had been an engineer and valuation expert for the Philadelphia Securities and Exchange Commission.

Howard Burton Shaw, 74, professor of Industrial Engineering at North Carolina State College, Raleigh, N. C., since 1932, died Dec. 15. Mr. Shaw had been dean of the School of Engineering, 1907-13, and director of the engineering experimental station, 1909-13 at the University of Missouri. He was a commissioner of the Missouri Public Service Commission, 1913-17.

William H. Hepburn, 72, for many years a partner in Hepburn and McClain Construction Co., Lisbon, Ohio, died Dec. 8. The firm constructed many of the early paved roads in Columbiana County.

CONTRACTS AND CAPITAL

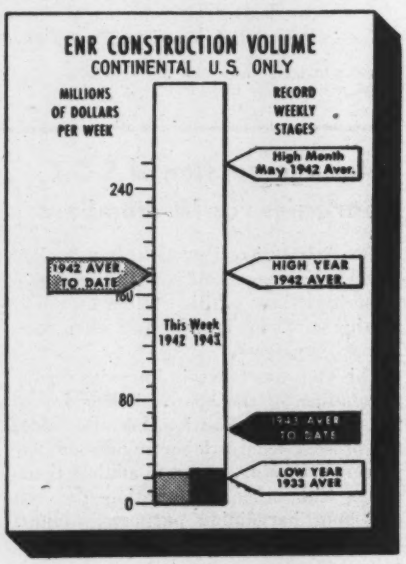
CIVIL ENGINEERING construction in continental U. S. totals $34,655,000 for the week. This volume, not including the construction by military engineers abroad, American contracts outside the country, and shipbuilding, is 30 percent higher than in the preceding week, and exceeds the $33,377,000 for the holiday-shortened week in 1942.

Public work is 43 percent above a week ago as a result of the 48 percent increase in federal work. Private construction, however, is 21 percent below last week.

The current week's construction brings 1943 volume to $3,033,664,000, an average of $59,484,000 for each of the 51 weeks of the period. On the weekly average basis, 1943 construction is 66½ percent under the $9,229,534,000 for the 52-week period in 1942. Private construction, $484,043,000, is 11 percent lower than last year, and public construction, $2,549,621,000, is down 70 percent when adjusted for the difference in the number of weeks.

In the classified construction groups, gains over last week are in sewerage, bridges, commercial and public buildings, streets and roads, and unclassified. Increases over the 1942 week are in sewerage, bridges, industrial, commercial and public buildings, earthwork and drainage, and streets and roads.

New capital for construction purposes for the week totals $4,414,000, and is made up of $4,211,000 in state and municipal bond sales, and $203,000 in corporate security issues.



CONTRACTS

Continental U. S. Only
(Thousands of dollars)

	Week Ending Dec. 24 1942	Dec. 16 1943	Dec. 25 1943
Federal	$32,051	$19,024	$28,073
State & Municipal	813	2,188	2,185
Total public	$32,864	$21,212	$30,258
Total private	513	5,580	4,397
TOTAL	$33,377	$26,792	$34,655
Cumulative 1943 (51 weeks)			$3,033,664
1942 (52 weeks)			$9,229,534

Note: Minimum size projects included are: Waterworks and waterways projects, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

NEW PRODUCTIVE CAPITAL

	Cumulative 1942 52 weeks	1943 51 weeks
NON-FEDERAL	$639,925	$319,044
Corp. Securities	182,729	22,431
State & Mun	217,041	130,435
R.F.C. loans	157,455	15,045
FPHA loans	.....	3,133
R.E.A. loans	.....	20,000
Fed.-Aid Hwy	82,700	128,000
FEDERAL	$9,579,186	$2,753,838
TOTAL CAPITAL	$10,219,111	$3,072,882

ENR INDEX NUMBERS

Index Base=100		1913	1926
Construction Cost	Dec. '43	294.51	141.37
Building Cost	Dec. '43	231.49	125.14
Volume	Nov. '43	149	65

CONSTRUCTION REPORTS

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York
ELSIE EAVES, Manager *SCOTT McLEOD, Statistician*
(Daily service also available—Write for details)

WATER SUPPLY

ROPOSED WORK

†**Ala., Phenix City**—Federal Works Agency, 1 Marietta St., Atlanta, Ga., WW sys., Ser. o. 1-155. J. W. Goodwin, Martin Bldg., rmingham, engr.

†**Ga., Dublin**—Federal Works Agency, Cand- r Bldg., Atlanta, 9,000 lin. ft. 6 in. water- ains, installing deep well pump, repairing ating water tank. $27,000.

Md., Frederick—Making plans filter plant terations, addns., consisting 3 addnl. filters, ixing basin, mechanical mixers, flash mixer d coagulating basin with concrete super- ructure over filters.

Minn., Richfield—H. Kinney, mayor, 7437 merson Ave. S., preliminary plans installing ater supply sys. for increased fire protection. 5,000 (not official). E. J. Prondzinski, 949 ymouth Bldg., Minneapolis, archt. R. loom, 3754 Joppa Ave., St. Louis Park, engr.

Okla., Midwest City—R. Brust, mayor, City all. $200,000 bond election, Dec. 28, enlarge- ent water distr. sys.

†**Tex., Benbrook**—U. S. Eng., First and Douglas Sts. N.W., Wash., D. C., start sur- ying soon, water reservoir in Trinity area. ,200,000.

Tex., Copperas Cove—J. R. Henson, mayor, ity Hall, water imprvs. $20,750. Applied for WA funds. J. E. Ward, Wichita Falls, engr.

†**Tex., Killeen**—City, B. M. McGregor, secy., ity Hall, bids soon, water supply and distr. s. extens., pump. station, pump, exten. ex- ting sewer collection and outfall sys. $148,- 00. **FWA.** F. J. von Zuben, 1606 Mistletoe r., Fort Worth, engr. CD 12/20.

IDS ASKED

Bids Asked After January 1

O., Belleville—Bd. Pub. Affairs, deep well arbine pump and pumphouse for same.

Bids Asked January 4

†**Tex., Fort Worth**—S. H. Bothwell, city gr., City Hall, Contr. 3, reservoir, Tex. 41- 11. **FWA.** Plans deposit $25. Freese & Nichols, apps Bldg., engrs. CD 9/7—ENR 9/9.

Bids Asked About January 5

†**Tex., Dallas**—V. R. Smitham, city mgr., ity Hall, moving (about 1¼ mi.) and re- ecting steel standpipe, 46 ft. diam., 63 ft. igh. **FWA.** Koch & Fowler, Great National ife Bldg., Myers & Noyes, Power Petroleum ldg., Rollins & Forrest, Praetorian Bldg., onsult. engrs. CD 11/11—ENR 11/18.

Bids Asked About January 15

†**Tex., Dallas**—V. R. Smitham, city mgr., ity Hall, 28,000 lin. ft. 36 in. c.i. watermain. **WA.** Koch & Fowler, Great National Life ldg., Myers & Noyes, Tower Petroleum Bldg., ollins & Forrest, Praetorian Bldg., consult. ngrs. CD 11/11—ENR 11/18.

Bids Asked About February 1

†**Tex., Dallas**—V. R. Smitham, city mgr., ity Hall, 55,000 ft. 12- to 30-in. c.i. water- ains. **FWA.** Koch & Fowler, Great National ife Bldg., Myers & Noyes, Tower Petroleum ldg., Rollins & Forrest, Praetorian Bldg., onsult. engrs. CD 11/11—ENR 11/18.

OW BIDDERS

Calif., Lompoc—City, Dec. 8, asbestos ce- ent water distr. mains, from E. T. Haas o., P. O. Box 411, San Mateo, **$29,700.**

Calif., Los Angeles—City Dpt. Water & ower, 207 S. Bway., Dec. 10, cement mortar ining 14,116 lin. ft. 72 in. steel water supply ipe, Spec. 8688, from American Pipe & onstr. Co., 4635 Firestone Blvd., South ate, **$86,401.** H. A. Van Norman, 207 S. Bway., engr.

La., Alexandria—City, Dec. 14, exten. water ys. around Horshoe Dr. to municipal water ys., from Boh Bros. Constr. Co., 2400 Cypress t., New Orleans, La., **$40,296.** Pan American ngineers, 912 Fifth St., engrs. CD 12/1.

ONTRACTS AWARDED

†**Fla., Jacksonville**—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N. W., Wash., D. C., auxiliary water supply, NAGS, NOY 7815, to **Stevens Southern Co., 2555 W. Beaver St., $15,000.**

†**Neb., Harvard**—City, M. J. Ayton, city clk., watermains, sewer, Proj. Neb. 23-141, to Chambers Const. Co., 621 Terminal Bldg., Lincoln, **$15,350. FWA.** Bids 12/3. R. Ful- on, Lincoln, engr. CD 11/10—ENR 11/18.

R. I., Providence—State Dpt. Finance, Div. Purchases, State House, WW, rip rapping Wenscott Reservoir, Douglas Pipe Causeway, to Narragansett Imp. Co., 104 Public St., **$3.48** per sq. yd. Bids 12/3.

Tex., Pt. Isabel—B. B. Burnell, mayor, City Hall, earthen storage reservoir and relocation pump. plant, etc., to Dodds & Wedegartner, 382 N. Bowie St., San Benito, approx. **$16,000.** CD 11/4—ENR 11/11.

Location of ENR Correspondents

Symbols and Abbreviations Include:

† Federal Government
★ Project of $500,000 or over
ENR Engineering News-Record
CD Engineering News-Record Construction Daily
A-E-M Architect-Engineer-Management type of contract

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterworks, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

Classes of Construction
(Named in order of Listing)

Water Supply	Unclassified
Sewers, Waste Disposal	Latin America
Bridges	Public Buildings
Streets & Roads	Commercial Buildings
Earthwork, Waterways	Industrial Buildings

Stages Reported

PROPOSED: (except Streets & Roads):
BIDS ASKED (new announcements only. For full calendar, see also preceding issues of ENR):
LOW BIDDERS: On jobs below $500,000 value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.
CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

Note: To comply with censorship requirements, addresses on some reports are being generalized. Data which would reveal the purpose of the improvements and the size are withheld. The name of contractor and general area are reported.

SEWERS, WASTE DISPOSAL

PROPOSED WORK

Calif., Vacaville—15 in. sewer line from Basic Vegetable Products plant to sewer farm, $62,000. Applied for **FWA** funds.

Fla., Daytona Beach—City, City Hall, bids soon sewage disposal plant. $350,000. Russell & Axon, Daytona Beach, engrs.

†**Fla., Orlando** — Federal Works Agency, Candler Bldg., Atlanta, Ga., bids soon, sanitary sewer exten., lift station, pressure lines, settling tank, appurtenances to supplement present sewerage sys. in housing area. $35,000.

Ia., Grundy Center—C. S. Macy, mayor, City Hall, sewage plant enlargement, imprvs. $30,000. Stanley Eng. Co., Muscatine, engrs.

Ia., Waterloo—K. Mathews, city clk., enlarging sewage plant. $50,000. N. Raker, City Hall, city engr.

†**Me., Portland**—J. Barlow, city mgr., sewer mains, etc. Over $25,000. **FWA.**

Md., Baltimore — City Engineer, Municipal Bldg., making plans sewage pump. sta. and main. $302,000.

†**Md., Towson** — Comrs. Baltimore Co., Court House, interceptor sewer, sewage pump. sta. $50,000. **FWA.** G. Wm. Stephens, Jr., Court House, engr.

†**R. I., Middletown**—Federal Works Agency, 101 Park Ave., New York, 17, N. Y., 3,700 lin. ft. 8- to 18-in. sewers, etc., R. I. 37-165. $50,000.

S. D., Hot Springs—City, preliminary survey sewage disposal plant imprvs., enlargements, $40,000. E. K. Mather, Mitchell, engr.

Tex., Goose Creek—Tejas Development Co., Goose Creek, soon lets contract, sewage disposal plant $25,000.

†**Tex., Killeen**—Town, addnl. sanitary sewer lines, facilities, Tex. 41-548. $90,525. **FWA.** F. J. Von Zuben, 1606 Mistletoe Dr., Fort Worth, engr. CD 12/9—ENR 12/16.

†**Utah, Magna**—Salt Lake Co. Comn., J. S. Evans, comr., Salt Lake City, sanitary sewerage sys. $187,225. **FWA.**

Va., Winchester—2,400,000 gal. sewage disposal plant, $400,000.

BIDS ASKED

Bids Asked January 3

Kan., Wichita—City, City Hall, intercepting sewer from sewage disposal plant to Plainview, $100,000; reconstructing sanitary sewers between Mathewson and Murdock Sts. and Topeka Ave. and 18. $70,000. P. L. Brockway, city engr.

†**Tex., Dallas**—V. R. Smitham, city mgr., City Hall, 18,000 lin. ft. 15- to 24-in. vitr. sewers and 1,200 lin. ft. 48 in. concrete sewer. Myers & Noyes, Tower Petroleum Bldg., Rollins & Forrest, Praetorian Bldg., Koch & Fowler, Great National Life Bldg., Dallas, consult. engrs. CD 11/11—ENR 11/18.

Bids Asked January 4

Calif., Los Angeles—Bd. Supervs. Los Angeles Co., Hall of Records, vitr. clay sanitary sewer, Long Beach Blvd., C.I. No. 1064. Over $25,000. Plans deposit $5. A. Jones, Hall of Records, engr.

Bids Asked January 6

Iowa—State Hy. Comn., Ames, 11,264 ft. 6- to 16-in tile drainage, Boone Co.

Bids Asked About February 1

Md., Towson—Comrs. Baltimore Co., Courthouse, excav., installing approx. 4,220 lin. ft. 6 and 8 in. terra cotta sewers, manholes, appurtenances in Baynesville area, Contr. 81-S. Plans deposit $5. Geo. Wm. Stephens, Jr., Court House, engr.

LOW BIDDERS

Mich., Roseville—Village, Dec. 6, 6- to 30-in. sewer, manholes, appurtenances, from Waterway Constr. Co., 22240 West Eight Mile Rd., Detroit, Zone 19, **$77,967.** H. R. O'Mara, 2220 National Bank Bldg., Detroit, Zone 26, engrs.

O., Cleveland—S. F. David, dir. Pub. Service, reconstructing Big Creek Intercepting Sewer, from National Engr. & Contr. Co., W. 4 St. and Central Ave., **$38,591.** Former bids rejected. CD 11/8—ENR 11/11, under LB.

CONTRACTS AWARDED

†**D. C., Bolling Field**—U. S. Eng., First and Douglas Sts. N.W., Wash., incinerator, Contr. 49-080-eng-51, to F. H. Martell Co., 920 17 Ave. N.W., Wash., **$33,783.**

†**La., Benton**—D. W. Brownlee, secy., Bossier Parish Police Jury, Courthouse, sewer imprvs., La. 16-194, to Worth James Constr. Co., Pyramid Bldg., Little Rock, Ark., **$87,393. FWA.** Bids 12/14. CD 11/26—ENR 12/2.

Mass., Worcester—City of Worcester, Sewer Dpt., North Worcester, trunk sewers, Clark and Mower Sts., sanitary and surface sewers, 785 ft. Mayflower Circle, 685 ft. Boyce St., 375 Ardmore Rd. Owner builds, **$63,400.**

†**N. J., Newark**—U. S. Eng., 120 Wall St., New York, 5, N. Y., garbage disposal plant bldg., to Anthony Lewis Inc., 40 Clinton St., **$34,404.** Bids 12/6. CD 12/3.

†**N. Y., Watervliet**—U. S. Eng., Chimes Bldg., Syracuse, incinerator, Watervliet Arsenal, Contr. 30-180-Eng-8, to Thompson Constr. Corp., 11 N. Pearl St., Albany, **$24,793.**

†**Okla., Midwest City**—Federal Works Agency, 310 Electric Bldg., Fort Worth, Tex., sewage disposal plant unit, to B. G. Welborn, 326 W. Davis St., Dallas, Tex., **$25,000.** Bids 12/3. CD 11/24—ENR 12/2.

Tex., Houston—Sanitary sewers in South McGregor Way, Grand, etc., to Elder Constr.

SEWERS, etc. (Contracts Awarded Cont'd.)

Co., 3006 Carrolton St., **$48,474.** CD 12/8—ENR 12/16.

Tex., Houston—Replacing 36 in. sanitary sewer mains in Ruth and Hutchins Sts., to Fulton Constr. Co., Esperson Bldg., approx. **$25,000.** CD 12/14—ENR 12/16.

†Va., Norfolk—Federal Works Agency, 601 State Planters Bank Bldg., Richmond, 19, subaqueous outfall sewer, Va. 44-325, to McLean Contracting Co., 1301 Fidelity Bldg., Baltimore, Md., **$239,460.** Bids 12/14. CD 11/23—ENR 12/2.

BRIDGES

PROPOSED WORK

O., Cleveland—Comrs. Cuyahoga Co., G. H. Stahler, clk., new bridges, approaches over Rocky River at W. 130 St., **$80,000;** over Ohio Canal, Riverview Rd., **$40,000;** over Baldwin Creek, Pleasant Valley Rd., **$73,000.** J. O. McWilliams, Standard Bldg., co. engr.

Pennsylvania—State Hy. Dpt., Harrisburg, made plans repairing highway bridge, at Wilkes Barre, Luzerne Co. $200,000.

BIDS ASKED

Bids Asked December 27

Que., St. Malachie—G. Lafontaine, municipality clk., City Hall, bridge construction, wooden, 2 masonry abutment, approaches, $30,000. O. Desjardins, Dpt. P. Wks., Quebec City, engr.

Bids Asked December 29

Colorado—State Hy. Dpt., Denver, treated timber overpass over Denver & Rio Grande Western R. R. tracks on W. 43 Ave. FAPM 91 (1) (off), Denver Co. Plans deposit $5. CD 11/23—ENR 11/25.

Bids Asked December 30

†R. I., Newport—H. E. McCauley, mayor, City Hall, bridge repairs, new approaches, Van Zandt Ave., R. I. 37-162. $25,000. **FWA.** Charles A. Maguire & Associates, 1515 Turks Head Bldg., Providence, engrs. CD 10/4—ENR 10/7.

LOW BIDDERS

Calif., Los Angeles—Bd. P. Wks., City Hall, Dec. 8, ornamental concrete railing for Aliso St. viaduct, from Oberg Bros., 401 W. Redonda Blvd., Inglewood, **$25,650.** Est. $31,350. CD 11/23.

Indiana—State Hy. Comm., Indianapolis, Dec. 17, bridge repair, new concrete floor, sidewalks, 9 spans, 20 ft. long, 46 in. roadway, Columbus Dr., Lake Co., from Kruzick Bros., Winamac, **$30,546.** Est. $37,334. CD 5/17—ENR 5/20.

Michigan—State Hy. Dpt., Lansing, Dec. 8, rein.-con. grade separation carrying Miller Rd. over Detroit Industrial Expressway, incl. grading, paving Miller Rd., Dearborn, Wayne Co., from Darin & Armstrong, 2041 Fenkell Ave., Detroit, **$205,796.** CD 12/2.

North Carolina — State Hy. & P. Wks. Comp., Raleigh, Dec. 16, structures, 10.49 mi. Craven Co., from Bowers Constr. Co., 805 W. South St., Raleigh, **$41,522.** Est. $25,000-$50,000. CD 12/9.

STREETS AND ROADS

BIDS ASKED

Bids Asked December 27

N. Y., Staten Island—President Richmond Boro, Boro Hall, Zone 1, concrete found., repaving Sea View Ave., from Hylan Blvd. to Quincy Ave.

Bids Asked December 28

Iowa—State Hy. Comn., Ames, maintenance concrete crushing along U. S. 75, Project M-3301, Monona Co.; on U. S. 75, approx. 2 mi. south of Le Mars, and in maintenance yard, at Le Mars Project M-3302, Plymouth Co.; along U. S. 75, Seargeant Bluff, Project M-3303, Woodbury Co. F. R. White, Ames, ch. engr.

Bids Asked January 4

†Maryland — Pub. Roads Admin., Federal Works Agency, Arlington Co., at office H. J. Spelman, dist. engr., 1440 Columbia Pike, Arlington, Va., constructing Project Maryland DA NR 4-F(2) Access Road to Naval Powder factory, Indian Head, Prince Georges Co. Plans deposit $10; adv. ENR 12/23.

Bids Asked January 4

Calif., Los Angeles—Bd. Supervs. Los Angeles Co., Hall of Records, oiled macadam on disintegrated rock surfacing Woodruff Ave., Carson to Centralia Sts., Cash Contr. 523. Over $25,000. Plans deposit $5. A. F. Cooley, Hall of Records Bldg., engr.

LOW BIDDERS

California—State Div. Hys., 308 State Bldg., Los Angeles, Dec. 9, imprv. 1.4 mi. hy., National City, San Diego Co., from V. R. Dennis Constr. Co., Box F, Hillcrest Sta., San Diego, **$46,847.** CD 11/19—ENR 11/25***1.4 mi. Route 12, Seeley to Camp Seeley, Imperial Co., from A. A. Johnson, 421 Pearl St., Laguna Beach, **$34,919,** CD 11/29***3 mi. Arlington Ave., Van Buren St. to Magnolia Ave., Riverside Co., from George Herz & Co., P. O. Box 191, San Bernardino, **$74,687,** CD 12/1.

Md., Baltimore—City Bd. Awards, City Hall, Dec. 10, concrete paving, Contr. 780 from Beaver Constr. Co., Race and Jeffrey Sts., **$37,688.** CD 12/7.

†Montana—Pub. Roads Admin., New P. O. Bldg., Portland, Ore., Dec. 9, surfacing, oiling 4.2 mi. Yellowstone Trail Hy., west of Saltese, from Union Constr. Co., Great Falls **$61,882.**

North Carolina—State Hy. & P. Wks. Comn., Raleigh, Dec. 16, imprv. 10.49 mi. Craven Co., from F. D. Cline, Fairview Rd., Raleigh, **$229,-416,** est. $225,000-$250,000; 2.97 mi. Lenoir Co., from West Constr. Co. of North Carolina, Kinston, **$104,197,** est. $100,000-$125,000. CD 12/9—ENR 12/10.

Ohio—State Hy. Dpt., Columbus, Dec. 14, imprv. 3.094 mi. Perry Co., from Blacktop Road & Driveway, Inc., Newark, **$49,500,** est. $50,200***3.682 mi. Defiance Co. from S. E. Johnson Co. 218 Terminal Bldg., Toledo, **$49,966,** est $50,500***4.339 mi. Wood Co., from Pierce Constr. Co., 2140 Ashland Ave., Toledo, est. **$223,600***6.294 mi. Lucas Co., from Arthur S. Langenderfer Inc., 4690 W. Bancroft St., Toledo, **$87,487,** est. $88,800***0.929 mi. Hamilton Co., from Foley Constr. Co., Boudinot Ave. & C. & O. R.R., Cincinnati, est. **$188,300***Cancelled, bids to have been opened Dec. 14, removing existing wood floor, installing creosoted floor on floor of bridge, Hocking Co.; replacing present timber floor with 6 in. creosoted timber floor incl. raising floor stringers and modifying pier and abutment, caps, backwalls on bridge, Tuscarawas Co. CD 12/2—ENR 12/9.

CONTRACTS AWARDED

†Kan., Great Bend—U. S. Eng., 10 E. 17 St., Kansas City, Mo., addnl. paving at modification center, to List & Clark Railway Exchange Bldg., Kansas City, Mo., **$57,000.**

†Kan., Walker—U. S. Eng., 10 E. 17 St., Kansas City, Mo., addnl. paving at modification center, to McMichael Concrete Co., Hunt Bldg., Tulsa, Okla., **$95,000.**

Minn., Rochester—Olmsted Co., J. L. Underleak, aud., City Hall, rock surfacing roads, to P. B. Halvorson, 615 14 Ave. S.W., **$29,450.**

†New Jersey—U. S. Eng., 120 Wall St., New York, 5, N. Y., roads, Hudson Co., to Franklin Contracting Co., 20 Washington Pl., Newark, **$50,000.**

New Mexico—F. G. Healy, acting engr., State Hy. Dpt., Santa Fe, grading, minor drainage structures, ballast and base surfacing 10.3 mi. DAWR 57, DeBaca Co., to Brown Bros., Albuquerque, **$45,018.** Est. $55,000. Bids 12/17.

South Carolina—State Hy. Dpt., Columbia, imprv. 2.768 mi. Anderson Co., to Suber & Co., Whitmire, **$55,485;** 2.723 mi. Richland Co., to Davis Moragne Constr. Co., 301 Gadsden St., Columbia, **$46,860.** CD 11/15—ENR 11/18.

†Va., Camp Patrick Henry (br. Newport News)—U. S. Eng., Fort Norfolk, grading, installing pipe, paving, etc., Contr. 44-110-eng-36, to G. P. Clay, Richmond, est. **$25,756.**

Washington—State Hy. Dpt., Olympia, imprv. 20.2 mi. Grays Harbor and Jefferson Counties, to R. E. Rush and G. F. Baird, Port Angeles, **$278,790;** Primary State Hy. 10, Chelan and Okanogan Counties, to G. A. Ensminger, Ellensburg, **$39,502.** Bids 12/14. Rejected bids 12/14, imprv. 2.055 mi. Island Co. CD 12/2 and 12/7.

EARTHWORK, WATERWAYS

PROPOSED WORK

Nebraska—Douglas, Sarpy and Washington Counties, Court House, Omaha, flood control work on Little Pappio Creek, $50,000.

BIDS ASKED

Bids Asked January 15

†Texas—Bureau of Reclamation, 616 Littlefield Bldg., Austin, grouting portion transverse contraction joints in Marshall Ford Dam and calking exposed portions longitudinal contraction joint at downstream face of abutment sections, Spec. No. 1715-D.

LOW BIDDERS

Illinois—State Div. Waterways, 201 W. Monroe St., Springfield, Dec. 14, 72 in. gravity cutlet pipe and rein.-con. control structure and all appurtenances through river levee on west bank Illinois River, 1½ mi. southwest of Meredosia, in McGee Creek Levee and Drainage Dist., Pike Co., from Sangamon Constr. Co., 700 North MacArthur St., Springfield, **$16,450.** CD 12/6—ENR 12/9.

Ohio—State Hy. Dpt., Columbus, Dec. 14, channel protection on Section Mansfield of SH 501, US30-N, Richland Co., from Purdy Constr. Co., 200 E. Longview Ave., Mansfield, **$31,136.** Est. $32,200. CD 12/2—ENR 12/7.

CONTRACTS AWARDED

Calif., Modesto—Modesto Irrigation Dist., canal, Imprv. Dist. 116, Lollich branch of Lateral 4 to T. C. Tunsen, Rt. 2, Box 856, **$25,895.**

†Massachusetts—U. S. Eng., 819 Industrial Trust Bldg., Providence, R. I., dredging maintenance project, No. 44/58, Bristol Co., to Trimount Dredging Corp., 10 State St., Boston. Est. under **$50,000.**

†N. J., Cape May—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., D. C., harbor bulkhead, U. S. Naval Base, NOY 6396, to O. Hansen, 7115 Atlantic Ave., Ventnor City, **$17,492.**

†Okla., Tulsa—U. S. Eng., 416 Wright Bldg., Zone 2, levees, left bank, Sout. B. Arkansas River, Sol. 34-066-44-2[illegible] to Jones Constr. Co., Emporia, Kan., **$63,300,** CD 11/18—ENR 11/18; constructing Tulsa and West Tulsa levees, floodway structures, etc., Sol. 34-066-44-23, to Ottinger Bros., Petroleum Bldg., Oklahoma City, **$66,000.** Bids 11/29. CD 11/18.

†Tex., Laredo—U. S. Eng., Fort Sam Houston, addnl. drainage facilities, to H. B. Zachry Co., P. O. Box 596, San Antonio, $46,411.

†Tex., Pt. Aransas—U. S. Eng., 25 St. and Avenue F, Galveston, dredging approx. 268,000 cu. yd. Intracoastal Canal between San Antonio Bay and here, to Hendry Corp., Rattlesnake, Fla., 6.305c per cu. yd.

Ont., Erieau—Village, P. S. Shillington, clk., raising height present sea wall and jetties, own forces. **$40,000.**

Que., Quebec—Dpt. Transport, Ottawa, Ont., addnl. dredging in St. Charles River, to Morton Engineering & Drydock Co. Ltd., Louise Embankment, **$55,000.**

UNCLASSIFIED

PROPOSED WORK

†Fla., Choctaw Field—RUNWAYS—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., D. C., construction 3 runways under Naval Air Training Center, $487,000.

†N. C., Burlington—AIRPORT—Civil Aeronautics Admin., Hapeville, Atlanta, Ga., airport completion. $475,000 allotted. E. B. Horner, mayor.

N. C., Morganton—AIRPORT—City, W. H. Griffin, mayor, airport. Voted $75,000 bonds Dec. 7 for joint municipal airport with city Lenoir. Lenoir to vote $75,000 bonds Jan. 11.

†N. C., Rockingham—AIRPORT—Civil Aeronautics Admin., Hapeville, Atlanta, Ga., completing airport. $75,000 allotted. W. H. Entwistle, mayor.

S. D., Lemmon—AIRPORT—City Clerk, airport. Over $25,000.

Texas — GAS WELLS — Arkansas-Louisiana Gas Co., Marshall, Tex., and Slattery Bldg., Shreveport, La., drilling, casing, completing developing several gas wells, Carthage and Bethany areas, Panola Co. $100,000.

Tex., Beeville—OIL WELL—Pure Oil Co., M. Esperson Bldg., Houston, drilling, developing 5,000 ft. test oil well. Over $25,000.

Tex., Bowie—OIL WELL—S. B. Johnson, et al, drilling, developing new 6,500 ft. test oil well. Over $25,000.

Tex., Bowie—OIL WELL, etc.—R. H. McBride, 4008 Lovers Lane, Dallas, drilling, casing, developing 6,500 ft. test oil well, storage. Over $25,000.

Tex., Cleveland—OIL WELL, etc.—Wm. Helis, Commerce Bldg., Houston, drilling, casing, developing 8,500 ft. test oil well, ground storage facilities, fuel line, Cottonwood Field area. Over $25,000.

Tex., Douglassville — OIL WELL — Phillips Petroleum Co., 404 N. Douglas St., Oklahoma City, Okla., drilling, developing new 6,000 ft. test oil well. Over $25,000.

Tex., Elbert—OIL WELL, etc.—Bruce Sullivan, Hooper-Byrne & Assoc., Throckmorton, drilling, developing new 5,400 ft. test oil well, earthen storage facilities, 1½ mi. northeast of here. Over $25,000.

Tex., Emory—OIL WELL, etc.—Central Pipe Line Co., Standard Bldg., Cleveland, O., drilling, casing, developing 5,500 ft. test oil well, storage facilities, etc. Over $25,000.

Tex., Encino—OIL WELL—Humble Oil & Refining Co., Humble Bldg., Houston, drilling, developing 8,000 ft. test oil well. Over $25,000.

Tex., Fannin—OIL WELL, etc.—Shield Oil Co., c/o F. W. Whield, Milam Bldg., San Antonio, drilling, casing, developing 5,000 ft. test oil well, storage facilities, 9 mi. northeast of here. Over $25,000.

Tex., Fort Stockton—OIL WELL—Humble Oil & Refining Co., Humble Bldg., Houston, drilling, developing new 7,500 ft. test oil well, 9 mi. northwest of here. Over $25,000.

Tex., Freeport — OIL WELL, etc. — Magnolia Petroleum Co., Esperson Bldg., Houston, drilling, developing new 12,500 ft. test oil well, ground storage facilities. Over $25,000.

Tex., Guerra—OIL WELL—Quintana Petroleum Co., Sterling Bldg., Houston, drilling, developing another deep test oil well, ground storage, Washburn Field area. Over $25,000.

Tex., Hamshire—OIL WELL, etc.—Glenn H. McCarthy, Inc., Sterling Bldg., Houston, drilling, casing, developing 10,000 ft. test oil well, earthen storage facilities, 3 mi. northwest of here. $45,000.

Tex., Hufsmith—OIL WELL, etc.—Shell Oil Co., Inc., Shell Bldg., Houston, drilling, casing, developing new 12,000 ft. test oil well, storage facilities, fuel line. Over $25,000.

Tex., Iraan—OIL WELL—Watchorn Oil & Gas Co., First National Bldg., Oklahoma City, Okla., drilling, developing new 7,000 ft. test oil well. Over $25,000.

LASSIFIED (Proposed Work, Cont'd.)

, Rankin—OIL WELL—Texas & Pacific & Oil Co., Fort Worth National Bank Fort Worth, drilling, developing new t. test oil well. $25,000.

, Raymondville — OIL WELL , etc. — American Co., Esperson Bldg., Houston, developing 7,000 ft. test oil well, storage. Over $25,000.

, Roma—OIL WELL—Sun Oil Co., Es- Bldg., Houston, drilling, developing 7,000 ft. test oil well, storage facilities. ron Field area. Over $25,000.

, Runge—OIL WELL—Albert Plummer Gulf Bldg., Houston, drilling, casing, loping 3,500 ft. test oil well. Over $25,000.

, Sargent—OIL WELL—Texas Co., 720 Jacinto St., Houston, drilling, casing, loping new 14,000 ft. test oil well, earthen ge facilities. $50,000 or more.

, Seminole—OIL WELL—Shell Oil Co., Bldg., Houston, drilling, developing deep oil well. Over $25,000.

, Sierra Blanca—OIL WELLS—Jno. C. ers, Van Horn, drilling, casing, develop- three 3,000 ft. test oil wells. Over $25,000.

, Stiles—OIL WELLS—Standard Oil Co. xas, Petroleum Bldg., Houston, drilling, loping 1 or more deep test oil wells. Over 00.

, Stiles—OIL WELL—P. N. Wiggins & Hyde, 8505 Preston Rd., Dallas, drilling, t developing 9,000 ft. test oil well. Over 00.

, Strawn—OIL WELL—W. F. Gordon, leum Bldg., Fort Worth, drilling, develop- 3,400 ft. test oil well, $25,000.

, Throckmorton—OIL WELL, etc.—Hel- ch & Payne, drilling, developing another ft. test oil well, earthen storage facili- 1¼ mi. southeast of here. Over $25,000.

, Whitsett—OIL WELL, etc.—H. Coquat, m Bldg., San Antonio, drilling, casing, loping new 6,500 ft. test oil well, storage ities, 3 mi. southeast of here. $25,000.

, Va., Fairmont—AIRPORT—City Council, icipal airport west end of Pleasant Valley. $100,000.

S ASKED

Bids Asked December 31

t., Cobourg—CRUSHING PLANT—Munic- ity, portable crushing plant, 30 cu. yd. per capacity, A. S. Miller, Town Hall, engr.

Bids Asked January 4

e., Dorval—WHARF—R. T. Donald, secy. M & S, Ottawa, Ont., wharf, for Royal L Y Club, 210 Joseph St. $25,000.

Bids Asked

Tex., Galveston—AIRPORT DOCK, etc— S. Eng., 25 St. and Avenue F, Galveston, k facilities at airport zone, Sol. 41-243-44- 1. Over $25,000.

W BIDDERS

Calif., Maywood—AIRFIELD BLDG.—U. S. , 751 S. Figueroa St., Los Angeles, addnl. ehouse at Air Force Supply Depot, No. from Zoss Constr. Co., 1037 Cole Ave., Angeles, $474,001.

Calif., Santa Maria—PARKING APRON— S. Eng., 751 S. Figueroa St., Los Angeles, e 14, Dec. 13, Parking Apron 1, Army Air e, No. 351, from C. W. Wood, 816 W. 5 Los Angeles, $235,497.

Calif., Stockton—STORAGE AREA SUR- CING—U. S. Eng., 1209 8 St., Sacramento, e 8, Dec. 14, storage area surfacing, c. 776, Stockton Motor Base, from A. chert & Son, Box 1113, Sacramento. Over 000.

†Okla., Pauls Valley — AIRPORT — Civil Aeronautics Admin., P. O. Box 1689, Fort rth, 1, Tex., Dec. 1, airport, incl. clearing, inage, grading, fencing, paving, condition- seeding, Sched. 1, from Austin Const. Co., las, Tex., $121,442***Sched. 2-A, from ndard Paving Co., 2119 E. 11 St., Tulsa, 9,300***Sched. 2-B, from Brazos Valley st. Co., Mineral Wells, Tex., $432,557*** ed. 2-C, from Cartwright Const. Co., esboro, Ark., $311,746. CD 12/8—ENR 11/4.

†W. Va., Martinsburg — AIRPORT IM- PROVEMENTS—Civil Aeronautics Admin., Guardia Field, Jackson Heights, N. Y., e. 15, from Lane Constr. Co., 37 Colony Meriden, Conn., airport imprvs., Sched. 1, paration of site, $524,465; Sched. 2, paving, 1, $400,100, Sched. 3, paving, Alt. 2, 4,724. CD 12/2—ENR 9/30.

NTRACTS AWARDED

Ariz., Tucson—PARKING APRON, etc.— S. Eng., 751 S. Figueroa St., Los Angeles, Calif., parking apron and taxiways, Contr. 53-eng-107, to United Concrete Pipe Corp., ona Sand & Rock Co., 1347 W. 208 St., Los eles, Calif., $65,773.

Ark., Blytheville—NIGHT LIGHTING SYS- M—U. S. Eng., 300 Bway., Little Rock, ht lighting sys., at Air Force School, to E. Gilliox., Monett, Mo., $41,316.

†Calif., Alameda—AIR STATION BLDGS. —Yards & Docks, Navy Dpt., 18 St. and stitution Ave. N.W., Wash., D. C., addnl. racks, bachelor officers' quarters, subsist- e bldg., Naval Air Station, NOY 7300, to Johnson, Drake & Piper, 1415 Latham Sq. Bldg., Oakland, $538,880. CD 12/10, under LB.

†Calif., Bakersfield — PARKING APRON, etc.—U. S. Eng., 1209 8 St., Sacramento, Zone 8, parking apron, removal of revetments, at Oildale Army Airdrome, Contr. 04-167-Eng-185, near here, to Griffith Co., Los Angeles Railway Bldg., Los Angeles, $57,577.

†Calif., Blythe—HANGAR TRUSSES—U. S. Eng., 751 S. Figueroa St., Los Angeles, installing trusses in hangars at Army Air Base, No. 344, to Summerbell Roof Structures, 754 E. 29 St., Los Angeles, $37,594.

†Calif., Fairfield—AIRPORT BLDGS., etc.— U. S. Eng., 1209 8 St., Sacramento, Zone 8, temporary frame bldgs., app. facilities, Fairfield-Suisun Airport, Contr. 04-167-eng-196, near here, to MacDonald & Kahn, 200 Financial Center Bldg., San Francisco, $136,500.

†Calif., Muroc—AIRFIELD BLDGS.—U. S. Eng., 751 S. Figueroa St., Los Angeles, Zone 14, temporary frame bldg., and app. facilities, Contr. 04-353-eng-152, to W. C. Beggs, 610 S. Bway., Los Angeles, $62,322.

†Calif., Ream Field—PARKING AREAS— Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., D. C., addnl. parking areas, A. A. S., NOY 8090, to Griffith Co., Los Angeles Railway Bldg., Los Angeles, $49,100.

†Calif., Salinas—APRON—U. S. Eng., 74 New Montgomery St., San Francisco, addnl. apron at Army Air Base, Spec. 1244, to Granite Constr. Co., Box 900, Watsonville, $61,300.

★**†Calif., San Francisco**—COVERED STOR- AGE—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., D. C., covered storage, M C S D, Isalias Creek, Spec. 12684, NOY 7938, to Morrison Knudsen Co., 3001 Russ Bldg., San Francisco. $1,033,000. CD 12/14.

†Florida — FLIGHT HAZARDS ELIMINA- TION—U. S. Eng., 575 Riverside Ave., Jacksonville, Zone 2, flight hazards elimination Neg-Jax-44-338, Highlands Co., to McCormick Eng. Co., Graham Bldg., Zone 1, and Okeechobee Constr. Co., 518 Phelps St., Zone 1, both Jacksonville. Est. $66,847. Awarded 12/6.

†Fla., Banana River—POWER FACILITIES —Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., D. C., addnl. power facilities, Naval Air Station, NOY 6141, to Batson-Cook Co., West Point, Ga., $47,177.

†Fla., Miami—AIR STATION FACILITIES— Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., D. C., addnl. sewerage facilities, N. A. S., NOY 6916, to Chas. M. Ewing, 752 S. Miami Ave., Zone 36, $34,460.

†Fla., Zephyrhills—TARGET RANGE, etc.— U. S. Eng., 575 Riverside Ave., Jacksonville, Zone 2, target range, erecting hutments, clearing, grubbing, etc., Zephyrhills AAF, Contr. 08-123-eng-184, to Nelan-Dickerson Constr. Co., Lakeland, $47,408.

†Ga., Camp Stewart—FACILITIES—U. S. Eng., Post Office Bldg., Savannah, addnl. facilities, Contr. 09-133-Eng-14, to T. H. Pearce & Co., Columbus, $84,663.

†Ga., Chatham Field (br. Savannah)— PARKING APRONS—U. S. Eng., Post Office Bldg., Savannah, addnl. parking aprons, Chatham AAF, Contr. 09-133-Eng-13, to Claussen-Lawrence Constr. Co., Augusta, $165,355.

†Ga., Chatham Field (br. Savannah)—STEEL HANGAR—U. S. Eng., Post Office Bldg., Savannah, pre-frabricated steel hangar erection on buttresses, to R. W. Didschuneit, Candler Bldg., Atlanta, approx. $25,000.

†Ga., Fort Benning—FACILITIES—U. S. Eng., Grant St. west of Westwood St., Mobile, Ala., addnl. facilities, temporary frame bldg., Contr. 01-076-eng-1111, Lawson Field, to Williams Constr. Co., Columbus, $17,313.

†Ga., Ousley—CLEARING, etc.—U. S. Eng., Post Office Bldg., Savannah, clearing, grubbing at Thomasville Airfield Bombing and Gunnery Range, Contr. 09-133-eng-18, to J. F. Thomason, Townsend, $80,800.

★**†Ga., Robins Field (br. Macon)**—RUNWAY EXTENSIONS—U. S. Eng., Post Office Bldg., Savannah, runway extens., Contr. 09-133-Eng-15, to H. E. Wolfe Constr. Co., Inc., St. Augustine, Fla., $632,421.

†Ill., Chanute Field—RIFLE RANGE—U. S. Eng., 520 Merchandise Mart, Chicago, rifle range, Contr. 11-632-Eng-614, to Thomas McQueen Co., Forest Park, $34,700.

†Ind., Evansville—AIRPORT PAVING, etc. —U. S. Eng., 612 Federal Bldg., Louisville, Ky., excav., runway, paving, extend. lighting sys., etc., municipal airport, Contr. 15-029-eng-334, to Pioneer Contract Co., Inc., U. Mt. Vernon Rd., $93,073.

†Ind., Indianapolis — HEATING FACILI- TIES—U. S. Eng., 612 Federal Bldg., Louisville, Ky., heating facilities, 4th Army Air unit Forces Storage Depot, State Fairgrounds, Contr. 15-029-Eng-336, to Freyn Bros. Inc. 1028 N. Illinois St. Est. $87,387.

†La., Selman Field (br. Monroe)—NIGHT LIGHTING SYSTEM—U. S. Eng., 300 Bway., Little Rock, Ark., night lighting sys., to M. E. Gilliox, Monett, Mo., $39,568.

La., Shreveport — STEEL HANGAR — City, H. E. Barnes, engr., reconstructing steel hangar, etc., to Rob. A. Neff, 2303 Bishop St., approx. $25,000.

†Md., Baltimore—SHIPYARD BUILDING— Bethlehem Fairfield Shipyard, Fairfield, 2 story, 93x103 ft. machine shop addn., Fairfield sect. to Irwin & Leighton, 1505 Race St., Phila., Pa. Est. $75,000. Federally financed. Bids 11/25. CD 11/19.

†Md., Patuxent River (br. Wash., D. C.)— TARGETS—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., D. C., targets, Contr. NOY 8218, N.A.S., to Dean McDonald, Inc., Hollywood, $33,000. Bids 12/3. CD 11/30.

†Mass., Boston—CLOSURE GATES—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., D. C., closure gates for D D No. 5, Navy Yard, NOY 7750, to Merritt-Chapman Scott Corp., 597 Madison Ave., New York, N. Y., $90,387.

★**Mass., East Boston (sta. Boston)**—AIR- PORT DREDGING, etc.—Dpt. P. Wks., 100 Nashua St., Boston, hydraulic process dredging and placing 4,000,000 cu. yd. materials for construction Embankments C and D, for proposed runways at General Lawrence Logan Airport to Gahagan Const. Corp., 147 Remsen Ave., Brooklyn, N. Y., $909,600. Bids 12/14. CD 12/17 under LB—ENR 11/25.

†Mass., Westover Field (sta. Chicopee Falls) —CONSTRUCTION—U. S. Eng., 819 Industrial Trust Bldg., Providence, R. I., addnl. construction, Contr. 37-018-Eng-42, to Platt Contr. Co. Inc., 169 Bridge St., Cambridge, $351,123.

†Mont., Great Falls—WARM-UP PADS— U. S. Eng., 800 3 Ave., Seattle, 4, Wash., warm-up pads, Gore Airfield, Contr. 45-108-eng-379, to Peter Kiewit Sons' Co., 1024 Omaha Natl. Bank Bldg., Omaha, Neb., approx. $185,704.

†N. J., Jersey City—CONSTRUCTION—U. S. Eng., 120 Wall St., New York, 7, N. Y., addnl. construction, No. 30-075-eng-377, to P. J. Carlin Constr. Co., 101 Park Ave., New York, N. Y., $160,207.

†N. M., Deming—NIGHT LIGHTING SYS- TEM—U. S. Eng., Albuquerque, outside night lighting sys. for airfield and street lighting, etc., to Reynolds Electrical & Eng. Co., Inc., 708 N. Piedras St., El Paso, Tex., $50,399.

†N. Y., Rome—AIR DEPOT ADDITIONS— U. S. Eng., Chimes Bldg., Syracuse, air depot addns., Contr. 30-180-eng-12, to Rathgeb-Walsh, Inc., 36 Broad St., Port Chester, $56,921.

†N. Y., West Point—AIRPORT DRAINAGE —U. S. Eng., 120 Wall St., New York, Zone 5, addnl. airport drainage, Galeville Airport Auxiliary Fld. 2, U. S. Military Academy, Contr. 30-075-eng-381, to Peckham Road Corp., 47 Mamaroneck Ave., White Plains, est. $29,840.

†O., Lima—SPRINKLER SYSTEM—U. S. Eng., 700 Union Guardian Bldg., Detroit, 31, Mich., installing sprinkler sys., Lima Tank Depot, to Blaw-Knox Co., 829 Beaver Ave., N.S., Pittsburgh, 12, Pa. $63,374.

†O., Lockbourne—NIGHT LIGHTING SYS- TEM—U. S. Eng., 522 U. S. Post Office & Courthouse, Cincinnati, night lighting sys., Contr. 33-015-eng-176, Lockbourne Aux. Air Base, Columbus, to Gustav Hirsch Organization, 310 W. Broad St., Columbus, est. $38,329.

†O., Wright Field (br. Dayton)—AIRFIELD FACILITIES—U. S. Eng., Dayton, airfield facilities, Contr. No. 33-046-eng-67, to H. W. Miller, Covington, Ky., est. $58,207.

†O., Wright Field (br. Dayton)—AIRPORT BLDG.—U. S. Eng., Dayton, temporary frame bldg., Contr. 33-046-Eng-68, to Charles B. Johnson & Son, Inc., 6 N. Michigan St., Chicago, Ill., $168,690.

†Okla., Ardmore—NIGHT LIGHTING SYS- TEM—U. S. Eng., 231 W. Main St., Denison, Tex., installing night lighting sys., Contr. 41-242-eng-105, Ardmore Auxiliary Airfield, to North Texas Constr. Co., Inc., Sherman, Tex., est. $41,375.

†Okla., Oklahoma City—RUNWAY EXTEN- SIONS, etc.—U. S. Eng., 416 Wright Bldg., Tulsa, Zone 2, runway extens., Contr. 34-066-Eng-86, to Koss Constr. Co., 205 Old Colony Bldg., Des Moines, Ia., $322,065; constructing addnl. facilities, Contr. 34-066-Eng-89, to Ditmars-Dickmann Constr. Co., Muskogee, $70,015, foregoing at Tinker Auxiliary Air Field.

†Ore., Portland—PARKING APRONS—U. S. Eng., 628 Pittock Blk., SW 10 Ave. and Washington St., addnl. parking apron areas, Portland AAB, Contr. 35-026-Eng-433, to Parker-Schram Co., Couch Bldg. Est. $29,740.

†Pa., Olmstead Field (P. O. Middletown)— AIR DEPOT BLDG., etc.—U. S. Eng., Standard Oil Bldg., Baltimore, Md., temporary frame bldg., apron and runway, Middletown Air Depot, Contr. 18-020-Eng-193, to R. H. Woelfel, Hazelton, $201,405.

†Texas—NIGHT LIGHTING INSTALLA- TION—U. S. Eng., San Angelo, night lighting installation at Laughlin A A F Del Rio, Goodfellow Field, San Angelo and San Angelo A A F Contr. 41-154-Eng-105, to Sanford Constr. Co. Oklahoma City, Okla., $58,850.

†Tex., Benbrook — HANGAR — U. S. Eng., 231 W. Main St., Denison, hangar at Aircraft Plant 4, to Quisle & Andrews, 3320 W. 7 St., Fort Worth, $25,000.

†Tex., Ellington Field (br. Houston)—AIR- FIELD BLDG.—U. S. Eng., 25 St. and Avenue F, Galveston, celestial navigation training bldg., etc., to Bace-Marshall Constr. Co., 4009 Center St., Houston, $38,287. CD 12/3—ENR 12/16.

UNCLASSIFIED (Contracts Awarded Cont'd.)

†Tex., El Paso—FACILITIES—U. S. Eng., Albuquerque, N. M., addnl. facilities at Army Training Station storage area, to R. H. Fulton & Co., Lubbock, **$27,775.**

†Tex., Foster Field (br. Victoria)—AIRFIELD BLDG.—U. S. Eng., 25 St. and Avenue F, Galveston, temporary frame bldg., Contr. 41-243-eng-108, to Noser Constr. Co., McAllen, **$147,379.**

Tex., Iraan—OIL WELLS—W. E. Brown & J. D. Hancock, 4029 Pineridge St., Houston, drilling, developing 3 new deep test oil wells, storage facilities, etc., to H. Schooler, Ozona, over **$25,000.** CD 12/17.

Tex., Karnes City—OIL WELL—Southwood Oil Co., Inc., Continental Bldg., Dallas, drilling, developing 5,500 ft. test oil well, earthen storage, 3 mi. northeast of here, to Rotary Drilling Co., Milam Bldg., San Antonio. Over **$25,000.**

†Tex., Laredo—AIRFIELD HOUSING—U. S. Eng., Fort Sam Houston, housing facilities at airfield, to C. L. Browning, Jr., 812 Insurance Bldg., San Antonio, **$64,897.** Bids 12-13.

†Tex., Matagorda—TAXIWAY—U. S. Eng., 25 St. and Avenue F, Galveston, Taxiway A at Bombing and Gunnery Range, to Consolidated Contractors, Edna, **$25,000.** CD 12/14—ENR 12/16.

†Tex., Midland—AIRPORT BUILDING—U. S. Eng., Fort Sam Houston, addnl. bldg. at airport hangar area, to McClellan-Brown-McClellan, 2215 Franklin Ave., Waco, **$30,337.**

†Tex., Moore Field (br. Mission)—RUNWAY, etc.—U. S. Eng., 25 St. and Avenue F, Galveston, North-South Runway, facilities, airfield, to H. Hedges, 1910 Runnels St., Houston, approx. **$25,000.**

†Tex., Tampa—AIRFIELD BLDGS.—U. S. Eng., 416 Wright Bldg., Tulsa, 2, Okla., paint spray shop at airfield and crash truck stations at Auxiliary Fields 3 and 4 Sol. 34-066-44-25 to J. Ted. Eilkerson, 1628 NW 23 St., Oklahoma City, Okla., approx. **$53,300.** CD 11/29—ENR 1/2.

†Va., Norfolk—NAVAL AIR STATION BLDGS.—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., D. C., addn. to Bldg. NR 132, N A S, NOY 7049, to Ross Engineering Co., 3308 14 St. N.W., Wash., D. C., **$52,925.**

†Va., Richmond—AIRFIELD FACILITIES—U. S. Eng., Fort Norfolk, Norfolk, addnl. airfield facilities, bldgs., utilities, Richmond Airfield, Contr. 44-110-eng-30, to James Fox & Sons, 2501 E. Franklin St., Richmond, **$110,975.** CD 12/10—ENR 12/16.

†Washington — CONSTRUCTION — U. S. Eng., 800 3 Ave., Seattle, Zone 4, addnl. construction, Grant Co., to C. M. Ludberg, W. 326 1 Ave., Spokane, **$341,400.**

†Wash., Seattle — SPRINKLER SYSTEM — U. S. Eng., 800 3 Ave., Seattle, 4, sprinkler sys., to Grinnell Co. of the Pacific, 3101 Elliott Ave., **$42,330.**

†Wash., Wenatchee — DRILLING — U. S. Eng., 800 3 Ave., Seattle, 4, churn and core drilling at Clark fork of Columbia River, near here, to Lynch Bros., 3635 Woodland Park Ave., Seattle, Zone 3, **$26,674.**

PUBLIC BUILDINGS

PROPOSED WORK

†Calif., Alameda—Home Owners' Loan Corp., 1440 Bway., Oakland, Zone 12, plans by C. A. Whitehead, 5365 Bway., Oakland, converting bldg. at 2029 Central Ave., providing living units for in-migrant war workers, Case No. W4D-86. Over **$5,000.**

†Calif., Berkeley—Home Owners' Loan Corp., 1440 Bway., Oakland, Zone 12, plans by M. D. Reynolds, 564 Market St., San Francisco, converting residence at 1611 Oxford St., providing living units for in-mgrant war workers, Case No. W4B-1090. Over **$5,000.**

†Calif., Berkeley—Home Owners' Loan Corp., 1440 Bway., Oakland, Zone 12, plans by A. Lewis Koue, 525 Market St., San Francisco, converting residence at 1829 Ashby Ave. providing 4 living units for in-mgrant war workers, Case No. W4B-1249, **$8,000.**

†Calif., Berkeley—Home Owners' Loan Corp., 1440 Bway., Oakland, Zone 12, plans by R. W. Jeans, 1824 San Pedro Ave., converting bldg. at 2540 College Ave., providing living units for in-migrant war workers, Case No. W4B-1159. Over **$5,000.**

†Calif., Oakland—Home Owners' Loan Corp., 1440 Bway., Zone 12, plans by J. H. Meigs, 647 Simon St., Hayward, converting residence at 1031 8 St., providing 5 living units for in-migrant war workers, Case No. W4B-1273, **$10,000.**

†Calif., Oakland—Home Owners' Loan Corp., 1440 Bway., Zone 12, plans by L. S. Mosias, 255 California St., San Francisco, converting residence at 837 33 Ave., providing 2 addnl. living units for in-migrant war workers, Case No. W4B-1299, **$10,000.**

†Calif., San Francisco—Home Owners' Loan Corp., 821 Market St., San Francisco, plans by L. S. Mosias, 255 California St., converting flat at 3301 Mission St., providing 2 living units for in-migrant war workers, Case No. W4A-1138, **$5,000.**

Calif., Woodland—Yolo Co., Courthouse, plans by W. D. Peugh, 333 Montgomery St., San Francisco, hospital, **$197,000.**

†Conn., Groton—Pub. Housing Auth., NHA, 24 School St., Boston, Mass., altering dormitories, War Housing, Conn. 6013. Project withdrawn. CD 12/16.

†Conn., Stratford—Pub. Housing Auth., NHA, 24 School St., Boston, Mass., will not construct roads, parking areas, Stonybrook Gardens war housing, Conn. 6061. Project cancelled. J. Whitney, Belden Hill, Wilton, archt. CD 12/6.

†Ind., Evansville — Pub. Housing Auth., NHA, 201 N. Wells St., Chicago, Ill., plans by E. C. Berendes, 121 N.W. 4 St., 60 unit frame housing, Ind. 12181. $180,000. CD 10/20—ENR 10/28.

Kan., Iola—Sisters of St. Joseph, c/o St. John's Hospital, Iola, hospital. $200,000.

†Me., South Portland (br. Portland)—Pub. Housing Auth., NHA, 24 School St., Boston, Mass., bids soon administration bldg., alterations, addn., housing Me. 17039.

Miss., McComb—City Bd. Educ., rebuilding high school destroyed by fire, $150,000.

†Miss., Pascagoula—Pub. Housing Auth., NHA, Georgia Savings Bank Bldg., Peachtree and Broad Sts., Atlanta, Ga., 720 unit dwellings, Miss. 22177. $175,000. CD 12/13—ENR 12/16.

†Mo., Joplin—St. John's Hospital, Joplin, bids soon, hospital addn. $350,000. **FWA.** Carroll & Dean, 1220 R. A. Long Bldg., Kansas City, Mo., archts. CD 9/30—ENR 10/7.

†Mo., Springfield—U. S. Eng., 10 E. 17 St., Kansas City, Mo., ward bldg. at O'Reilly General Hospital. Under $300,000.

†New Jersey—Lawrence Engineering & Research Corp., Vreeland Mills Rd., Linden, addnl. plant facilities, Union Co. Approx. $100,000. Defense Plant Corp. will finance.

★**†Ohio**—Lake City Malleable Co., 5000 Lakeside Ave., Cleveland, making plans 1 story, 160x400 ft. malleable castings factory, brick, steel, concrete. $3,360,000. Defense Plant Corp. will finance. Rust Engr. Co., Clark Bldg., Pittsburgh, Pa., engrs. CD 12/10—ENR 12/16.

†O., Dayton—Pub. Housing Auth., NHA, 22073, E. 9 St., Cleveland, bids soon, site imprvs. for housing, Ohio 33051. Edward G. Conrad & Assoc., Hanna Bldg., Cleveland, archts.

Pa., Norristown—Dpt. Welfare, Capital Bldg., Harrisburg, sketches by Howell, Lewis, Shay, Packard Bldg., Phila., hospital addn.

†Pa. Phila.—Federal Works Agency, 101 Park Ave., New York, 17, N. Y., venereal disease clinic facilities, at Frederick Douglass Hospital, 1530 Lombard St., Proj. Pa. 36-226. $71,700.

★**†Pa., Sharon** and **Farrell**—Pub. Housing Auth., NHA, 270 Bway., New York, 7, N. Y., sketches soon by Burke, Smart & Braziell, 306 Magee Bldg., Pittsburgh, 150 unit 2 story, basmt., permanent family dwellings. $750,000. CD 12/10—ENR 12/16.

★**†Texas**—J. S. Abercrombie Co., and Harrison Oil Co., Gulf Bldg., Houston, addnl. plant facilities, Brazoria Co. $4,000,000. Defense Plant Corp. will finance.

†Tex., Camp Barkeley (br. Abilene)—U. S. Eng., Fort Sam Houston, theatre bldg., incidental work.

†Tex., Dallas—Defense Plant Corp., 811 Vermont Ave. N.W., Wash., D. C., shell casing plant units (armament) Austin Bridge Co., 1813 Clarence St., will operate.

†Va., Crewe—Federal Works Agency, 601 State Planters Bank Bldg., Richmond, Zone 19, sketches made by A. M. Lublin, Dickson Bldg., Norfolk, public health centre, Va. 44-311. $17,200.

Va., Portsmouth—City Manager, City Hall, plans by Rudolph Cooke & Van Leeuwen, Inc., Monticello Arcade, Norfolk, recreation bldg. $100,000.

†Wis., Waukesha—Veterans Admin., Vermont Ave., between H and I Sts. N.W., Wash., D. C., Veteran's Sanitarium alterations, addn. $265,000.

†Wyo., Cody—Pub. Housing Auth., NHA, Dierks Bldg., 1006 Grand Ave., Kansas City, Mo., plans by L. C. Goodrich, engr.-archt., 226 N. 2 St., Casper, trailer housing.

†Wyo., Powell—Pub. Housing Auth., NHA, Dierks Bldg., 1006 Grand Ave., Kansas City, Mo., sketches by L. C. Goodrich, engr.-archt., 226 N. 2 St., Casper, trailer housing.

BIDS ASKED

Bids Asked December 27

Ont., Hamilton—W. Morrison, mayor, City Hall, hospital addn. for Hamilton General Hospital Bd., J. F. Berry, city clk. McDonald & Lenz, 42 N. James St., archts. J. F. Berry, city clk. CD 9/8—ENR 9/23 under Commercial Bldgs.

Bids Asked After December 28

†Me., South Portland (br. Portland)—Pub. Housing Auth., NHA, 24 School St., Boston, Mass., frame store addn., Me. 17031. Plans deposit $50 first set, $10 each addnl. set. CD 11/30—ENR 12/2.

Bids Asked December 30

†Utah, Gold Hill—Pub. Housing Auth., NHA, Dierks Bldg., 1006 Grand Ave., Kansas City, Mo. 8 temporary war trailers, Utah 42182. Five Associates, Belvidere Hotel, Salt Lake City, engrs.-archts.

†Utah, Wendover—Pub. Housing Auth., NHA, Dierks Bldg., 1006 Grand Ave., Kansas City, Mo., 30 temporary war trailers, Utah 42180. Five Associates, Belvidere Hotel, Salt Lake City, engrs.-archts.

Bids Asked January 3

†Utah, Lark—Pub. Housing Auth., NHA, 1006 Grand Ave., Kansas City, Mo., 20 dwellings. Five Associates, Belvedere Hotel, Salt Lake City, engrs.-archts.

Bids Asked January 4

†Ky., Henderson—Pub. Bldgs. Admin., 19 and F Sts. 10 N.W., Wash., D. C., 25, Henderson Hospital, Ky. 15-113. **FWA.** F. J. Hahern, 909 Realty Bldg., Louisville, archt. 12/8—ENR 12/16.

†La., De Quincy—Calcasieu Parish School Dist. 21, school. $150,000. Dunn & Quin, Lake Charles, archts. CD 7/15—ENR 7/22.

Bids Asked January 5

†Calif., Vallejo—City of Vallejo Housing Auth., Victory Apts., Ryder St., 1,000 family dwelling units, community bldg., Calif 49-2. D. H. Horn, Hotel Claremont, Berkeley, archt. CD 11/16—ENR 11/18.

Ont., Port Arthur—R. T. Donald, secy., Dept. M. & S., Ottawa, naval barracks, Court House, Dpt. Naval Services, Cartier Sq., Ottawa, archts. CD 6/1—ENR 6/8.

Bids Asked January 6

†Ariz., Phoenix—Pub. Bldgs. Admin., 19 and F Sts. N.W., Wash., 25, D. C., classroom bldg. for Isaac School, School Distr. 5, Ariz. 2-8. **FWA.**

Bids Asked January 7

†N. Y., Rockville Centre—Mercy Hospital, Village Ave., hospital addn., Docket NY 28-3, $290,000. **FWA.** J. Gunther, 193 Rockaway Ave., Valley Stream, archt. CD 9/21—E 9/23.

Bids Asked

†Me., South Portland (br Portland)—Pub. Housing Auth., NHA, 24 School St., Boston, Mass., brick, school, for housing Me. 17... Miller & Beal, Inc., 465 Congress St., Portland and Desmond & Lord, 6 Beacon St., Boston, Mass., archts. H. E. Bailey, 177 State St., Boston, Mass., engr. CD 12/10—ENR 12/...

†Massachusetts—U. S. Eng., 31 St. James Ave., Boston, (selected list bidders), alter. bldg., No. 19-023-44-Neg 146, Middleser... $5,000.

LOW BIDDERS

★**†New York**—U. S. Eng., 120 Wall St., New York, Zone 5, Dec. 15, cantonment addn., Fox Hills, Richmond Co., from Thompson-Starrett Co., Inc., 444 Madison Ave., New York Est. **$2,000,000.** CD 12/9—ENR 12/16.

†Pa., Birdsboro—Pub. Housing Auth., NHA 270 Bway., New York, 7, N. Y., Dec. 14, 150 unit family housing, Pa. 36440, from Delta Constr. Co., Harwood Bldg., Scarsdale, N. Y. **$439,083.** CD 12/1—ENR 12/9.

†Pa., Erie—Federal Works Agency, 101 Park Ave., New York, N. Y., Dec. 14, hospital addn., nurses home and laundry bldg., Hamot Hospital, from Alexander Martirano, 280 Hugus St., New Rochelle, N. Y., **$247,399.** Delayed low bid. CD 12/17 under LB—ENR 11/25.

★**†Wash., Poulsbo**—Pub. Housing Auth., NHA, Skinner Bldg., Seattle, Zone 1, Dec. 10 200 unit temporary housing, from Lease & Leigland, Vance Bldg., Seattle, Zone 4, **$539,000.** Naramore, Bain, Brady, Johanson & Duffy, Smith Tower, Seattle, Zone 4, archts.

CONTRACTS AWARDED

†Ark., Little Rock—U. S. Eng., 300 Broadway, rebuilding Camp Robinson laundry, to Peterson & McFayden, Commercial National Bank Bldg., **$69,458.** Awarded 12/14.

†Calif., Inyokern—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., D. C., temporary quarters, facilities, NOY 8123, to Macco Constr. Co., Freight and Ferry Sts., Oakland, **$421,570.** CD 11/3—ENR 12/2.

†Calif., Oakland—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., D. C., completion of work begun under NOY 5937, Naval Hospital, to K. E. Parker Co., 135 South Park St., San Francisco. CD 9/21.

★**†Calif., Oxnard**—Pub. Housing Auth., NHA, 785 Market St., San Francisco, 4, frame dwelling units, Calif. 4777, to Jensen & Jepson, 1730 S. Hayworth Ave., Los Angeles **$733,600.** Bids 12/7. CD 10/29—ENR 11/4.

†Calif., Pt. Chicago—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., D. C., recreation facility bldg., Magazine, NOY 6315, to Barrett & Hilp, 1... Harrison St., San Francisco, **$228,390.**

★**†D. C., Wash.**—Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., housing for WAVES, West Potomac Park, NOY 9... to Ross Engineering Co., Riggs National Bank Bldg., **$846,900.** CD 12/1—ENR 12/9.

†Fla., Penniman — Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash., D. C., personnel facilities and railroad trestle, N.S.D., Cheatham Annex, NOY 7... to Virginia Engineering Co., Melson Bldg., Newport News, Va., **$275,300.**

†Ga., Warner Robins—U. S. Eng., Post Office Bldg., engine accessories repair bldg., and misc. equip. repair bldg., Ser. No. ROB 1-... to A. R. Briggs Constr. Co., Macon, **$...**

†Kan., Topeka—U. S. Eng., 10 E. 17 St., Kansas City, Mo., temporary frame bldg., Topeka Supply Depot, near here, Contr. 028-Eng-206, to W. C. Wiedenmann & Son and Dechand Roofing Co., 600 Emmett St., **$214,273.**

LIC BLDGS. (Contracts Awarded Cont'd.)

...aryland—Triumph Explosives, Inc., Elk-... frame bldgs., for Navy Dpt., to Consoli-...d Engineering Co., 20 E. Franklin St., ...more. Est. $400,000. Whitman, Requardt ...ilk, 1304 St. Paul St., Baltimore, engrs. ...archts. CD 10/20—ENR 10/28.

...d., Aberdeen—U. S. Eng., Standard Oil ..., Baltimore, research and development ... at Aberdeen Proving Grounds, incl. ...ies to Potts & Callahan Constr. Co., 600 ...29 St., Baltimore. Est. $281,237. Bids ... CD 11/19—ENR 11/25.

...d., Bethesda (br. Wash. D. C.)—Yards ...ocks, Navy Dpt., 18 St. and Constitution ..., N.W., Wash., D. C., subsistence bldg. ...isions, addns. at U. S. Naval Medical ...er. Contr. NOY 6797, to John McShain, ... Arlington Farms, Arlington, Va., $82,200. ... 11/30. CD 11/24.

...d., Frederick—U. S. Eng., 1 and Douglas ..., N. W., Wash., D. C., addnl. bldgs., ...ties at Camp Dietrich, to H. K. Ferguson ... Hanna Bldg., Cleveland, O. CD 12/3— ... 12/9.

...Md., Patuxent River (br. Wash. D. C.)— ...Yards & Docks, Navy Dpt., 18 St. and ...stitution Ave., N.W., Wash., D. C., bar-...s mess hall and utilities, NAS., NOY ... to Peaty & Fuhrman, Inc., 369 Lexing-...Ave., New York, N. Y., $601,000, CD 12/1— ... 12/9, under LB; enlisted men's housing, ...ities, NAS, NOY 7784, to Harwood-Nebel ...str. Co., Inc., 1520 K St. N. W., Wash., ... $1,836,000. CD 12/3—ENR 12/9, un-... LB.

...ich., Benton Harbor—Pub. Housing Auth., ... 2073 E. 9 St., Cleveland, O., 124 unit ...porary family dwellings, Mich. 20220, to ...ce Bros., 203 Brewer Arcade, Saginaw, ...,405. Bids 11/22; 75 unit temporary ...ily dwellings, Mich. 20222, to James R. ..., Inc., Lafayette, Ind., $249,496. Bids ...1, both awarded 12/13. CD 11/9 and ...—ENR 11/11 and 10/28 respectively.

...Mich., Flint—Pub. Housing Auth., NHA, ...073 E. 9 St., Cleveland, O., 220 unit tem-...ry family dwellings, Mich. 20211, to Cun-...ham-Rudy Co., 3037 N. Grand Bldg., De-... $696,000. Awarded 12/13. CD 9/14— ... 9/16.

...ich., Pontiac—Pub. Housing Auth., NHA, ... E. 9 St., Cleveland, O., 80 unit temporary ...ly dwellings, Mich. 20218, to Reisdorf & ...e, 305 Donovan Bldg., Detroit, $273,800. ... 11/13. CD 10/26—ENR 10/28.

...Nev., Hawthorne—Yards & Docks, Navy ... 18 St. and Constitution Ave. N.W., ...h., D. C., TNT reclaiming bldg. and ...ter bldg. and bank bldg., NAD, NOY 7619, ...F. P. Nell Co. Ltd., Hawthorne, $206,077. ... 10/13.

...J., Hoboken—Stevens Institute of Tech-...gy, Hudson St., 2 story, 42x337 ft., brick, ...ete experimental towing tank bldg., for ...y Dpt., to Hegeman Harris Co., 331 Madi-... Ave., New York, $200,000. Voorhees, ...ker, Foley & Smith, 101 Park Ave., New ..., N. Y., archts.

...C., Enka—American Enka Corp., Enka, ...2 story, brick, factory type bldgs., to Pot-...& Shackelford, Greenville, S. C., $113,266. ...erally financed. Awarded 12/14.

...O., Cleveland—Pub. Housing Auth., NHA, ...2073 E. 9 St., 440 unit temporary family ...llings, Ohio 33274, to James McHugh ...str. Co., 6449 S. South Park Ave., Chicago, ... $1,360,000. Bids 11/15, awarded 12/13. ...11/17—ENR 11/25 under LB.

...O., Lima—Pub. Housing Auth., NHA, 2073 ... St., Cleveland, 60 unit temporary family ...llings, Ohio 33283, to Neighborgall & ...ch, Inc., Huntington, W. Va., $175,880. ... 11/15. CD 11/8.

...Washington—U. S. Eng., 800 3 Ave., ...tle, Zone 4, steam plant and incinerator, ...ce Co., to General Installation Co., P. O. ... 519, Olympia, $65,185.

...Wis., Kenosha—Pub. Housing Auth., NHA, ...201 N. Wells St., Chicago, Ill., 260 unit ...porary row houses, Wis. 47072, to Zisken ...str. Co., 4424 W. Roosevelt Dr., Chicago, ... $738,900. Bids 11/23. CD 12/2—ENR 12/9 ...er LB.

...an., St. James (Postal Dist. Winnipeg)— ... P. Wks., Ottawa, Ont., Active Treat-...t Pavilions 1 and 2, Deer Lodge Military ...pital, Portage Ave. W., to G. A. Baert, ... Des Meurous St., St. Boniface, $406,241. ... 13/1. CD 11/24—ENR 12/2.

...an., Winnipeg—Dpt. P. Wks., Ottawa, ..., Active Treatment Pavilions 1 and 2, at ...r Lodge Military Hospital, to G. A. Baert, ... Des Meurous St., St. Boniface, $407,241. ... 10/21—ENR 10/28.

...ec., Montreal South—Dpt. National De-...e (Army), Ottawa, Ont., temporary ac-...mmodation at Jacques Cartier Barracks, to ...G. Ogilvie & Co., Ltd., 2228 Walkley Ave., ...treal. $185,000.

...ec., Montreal—Dominion Govt., c/o Minis-... of Munitions & Supply, Ottawa, Ont., ...ance workshop, to A. Janin & Co., Ltd., ... Sherbrooke St. W., $45,000. Dpt. Na-...al Defense, Cartier Square, Ottawa, Ont., ...ts.

COMMERCIAL BUILDINGS

...OPOSED WORK

...ark., Monticello—Allen Hotel, Monticello. ...structing hotel, destroyed by fire, $200,000.

Ind., Logansport—Baptist Temple, Rev. L. Dean, pastor, 2 story, brick, stone **church**. $150,000.

Kan., Baldwin—Baker University, Baldwin, plans by T. R. Griest, New England Bldg., Topeka, rebuilding gymnasium. $250,000. CD 10/11—ENR 10/14.

La., New Orleans—Mortgage Loans, Inc., Monteleone Hotel, 14 or more convertible duplexes, facilities, utilities, etc. $150,000.

Mass., Auburndale—Church of the Messiah, Commonwealth Ave. and Auburn St., sketches by Chas. Collens, 71 Newbury St., Boston, brick, stone church. $150,000.

Minn., St. Paul—C. T. Miller Hospital, P. D. Ward, supt., 135 W. College Ave., plans by C. H. Johnston, 715 Empire Bank Bldg., new nurses' home bldg., or remodeling existing bldg. as alternative. Over $140,000 (not official). Seeking FWA funds.

O., Cleveland — American Home Builders Corp., M. Arnoff, pres., 8511 Memphis Ave., twenty-five 1½ story, 25x29 ft., brick houses. $150,000.

Okla., Woodward—U S O, 350 Fifth Ave., New York, N. Y., remodeling bldg. $13,000.

Pa., Clarksville—Owner, c/o archt., C. C. Compton, archt., 419 Thompson St., Donora, 2 story, 51x114 ft., brick on hollow tile theatre and boiler room.

Tex., Dallas—Lakewood Homes Co., Abrams Rd., 144 frame, brick type dwellings totalling 200 family units. $400,000.

Tex., Galveston—Galveston Home Development Co., plans by T. McCleary, 2145 W. Alabama St., Houston, 126 frame residences. $450,000.

★**Que., Outremont (Postal Dist. Montreal)**—J. C. E. Trudeau, 84 McCullough Ave., apartment block of 200 suites. $500,000.

BIDS ASKED

Bids Asked December 28

O., Barberton—Albert Kahn, Associated Architects & Engineers, Inc., archts., 321 New Center Bldg., Detroit, Mich., 2 story, bsmnt., brick, rein.-con. office and personnel bldg., for Selberling Rubber Co., Barberton. $350,000.

CONTRACTS AWARDED

Calif., Alameda—Backett & Federighi, 1330 Davis St., San Leandro, forty 1 story, 5½ room residences, Valita Dr., Barbera Court and Thomas Ave. Owner builds. $160,000.

★**Calif., Long Beach**—Biltmore Homes, 2111 W. Willow St., 148 frame, stucco dwellings. Owner builds. Est. $600,000. C. N. Aldrich, 1834 Dawson Ave., archt.

Conn., Bridgeport—Abelman & Goodstein, 2740 Main St., Stratford, 1½ story, 5 room housing development, Sound View Village. Owner builds. $150,000. G. C. Anderson, 177 State St., archt. CD 12/10.

Conn., Stratford—H. Jiler, 342 Pacific St., Bridgeport, 1½ story, frame residential development for war workers. Owner builds. $150,000. F. C. Anderson, 177 State St., Bridgeport, archt. CD 12/10.

Kan., Kansas City—W. J. Klassen, Occidental Bldg., 8 brick apartment bldgs., 18 St. and Washington Blvd. Owner builds. $160,000. Neville & Sharp, Midland Bldg., Kansas City, Mo., archts.

La., New Orleans—Owner, c/o contractors, 59 double cottages St. Claude Ave., near St. Bernard Parish Line, to Perrilliat-Rickey Constr. Co., S. Renden and Eve Sts. $425,000.

O., Cleveland — Superior-Coventry Co., F. Robbins, 340 Leader Bldg., twenty-four suite, 2½ story, brick apartment bldg., Cleveland Heights, to M. Appelbaum, 3284 Enderby Rd., Cleveland Heights. Est. $150,000. M. P. Halperin, 3759 E. 146 St., archt.

★**O., Warren**—Eastern States Homes, Inc., N. Winston, pres., A. Holzer, vice pres., 22 W. 48 St., New York, 19, N. Y., eighty-seven 2 story, bsmnt., 26x34 ft., brick duplex dwellings, incl. site imprvs., grading, sewer, water lines and concrete sidewalks, to M. Shapiro & Son Constr. Co., 254 W. 54 St., New York, N. Y. Est. over $1,000,000. CD 11/8—ENR 11/14.

Pa., Munhall—Ruthfred, Inc., c/o F. C. Brown, pres., Ruthfred Acres, Library, thirty-six 2 story, bsmnt., 21x36 ft., brick residences, to Hodge & Webeck, RD 1, Library. Est. $288,000. W. C. Young, 324 4 Ave., Pittsburgh, archt.

Pa., Pittsburgh—R. E. Behrman, Keystone Bldg., two 2 story, 100x400 ft. bsmnt., brick, tile, apartment bldgs., separate contracts. P. Friedman, 5509 Avondale Pl., archt.

INDUSTRIAL BUILDINGS

PROPOSED WORK

Conn., Bridgeport—FACTORY—Owner, c/o P. P. Petrofsky, archt., 177 State St., brick factory addn. $40,000.

Mass., Lynn—PLANT—Garco Products, Inc., 71 Linden St., plans by M. F. Coombs, 54 Central Ave., 1 story, 75x130 ft. brick, concrete plant, $40,000.

Minn., St. Paul—WAREHOUSE—The Chicago, Rock Island & Pacific Ry. Co., F. W. Thompson, ch. engr., La Salle St. Station, Chicago, Ill., rebuilding brick warehouse for fruit and product terminal, Easton and Fillmore Sts., south side of Mississippi River. $275,000.

O., Akron—FACTORY—B. F. Goodrich Co., 500 S. Main St., 2 story, brick, concrete factory addn., S. Main St. $50,000.

★**Pa., Phila.**—PLANT—Publicker Industrial Alcohol Co., 1429 Walnut St., sketches by United Engineers & Constructors, Inc., 1401 Arch St., evaporating plant. $2,000,000.

Tex., Brownsville—PLANT—Food Machinery Corp., Harlingen, and c/o Bartlett Cocke, archt., Milam Bldg., San Antonio, 1 story, 120x600 ft. fireproof food products plant, $200,000. W. E. Simpson Co., Milam Bldg., San Antonio, engr.

Tex., Houston — FACTORY — Earl North Buick Co., 2301 Milam St., 1 story, brick factory bldg. annex, $40,000.

Tex., Texas City—PLANT—Texas City Tin Processing Co., rein.-con. settling base bldg. Over $40,000. R. J. Cummins, Bankers Mtg. Bldg., Houston, engrs.

Tex., Weslaco—PLANT—Rio Grande Valley Citrus Exchange, 1 story, brick concrete dehydration plant, $40,000.

Wis., Kaukauna — BOTTLING HOUSE — Electric City Brewing Co., plans by E. A. Wettengel, 116 S. Pierce Ave., Appleton, 2 story, 24x66 ft., brick, structural steel bottling house addn., concrete fdn.

BIDS ASKED

Bids Asked About December 30

Tex., Gilmer—FROZEN FOOD LOCKER PLANT—Upshur Co. Rural Electrification Admin., Gladewater, 600-unit frozen food locker plant, $40,000.

Tex., Gladewater—FROZEN FOOD LOCKER PLANT—Upshur Co. Rural Electrification Admin., 600-unit frozen food locker plant. About $40,000.

CONTRACTS AWARDED

Calif., Los Angeles—PLANT—Levine Cooperage Co., 156 S. Anderson St., design and construction cooperage plant, incl. 42 x 40 ft. office bldg., 31 x 60 ft. boiler house, 100 x 300 ft. and 99 x 150 ft. factories, 100 x 150 ft. warehouse, 5400 S. Soto St., to Ted R. Cooper Co., 1031 S. Bway., approx. $100,000.

Kan., Wichita—GARAGE—Santa Fe Trail Transportation Co., 419 W 3 St., bus service garage, day labor. $49,000.

Mass., Ludlow—FACTORY—Ludlow Mfg. Co., brick factory addn. to Mill 8, general imprvs., to Casper Ranger Constr. Co., 6 Newton St., Holyoke. Est. $40,000. Bids 12/6. CD 12/6—ENR 12/9.

Minn., Rochester—PLANT—Rochester Dairy Cooperative, J. M. Punderson, genl. mgr., 98 x 168 ft., powdered milk plant, brick, rein.-con., to G. Schwartz & Co., Rochester. $140,000, cost plus. M. O. Buetow, 1931 University Ave., St. Paul, archt.

Minn., Winona—PLANT—Winona Tool Mfg. Co., 1430 W. Bway., tool plant addn., to P. Earl Schwab, 166 W. 2nd St. Est. over $40,000 incl. equip.

Mo., St. Louis—PLANT, etc.—Chapman Ice Cream Co., 3912 Eastern Ave., Zone 13, repairing, altering ice cream mfg. plant, offices, etc., to Wendell Shasserre, 5965 Wells Ave., Zone 12. E. T. Friton, Security Bldg., 4 and Locust Sts., Zone 2, archt.

Neb., Omaha—FLOUR MILL—Omar, Inc., 1910 Harney St., flour mill, to Parsons Constr. Co., 512 Grain Exchange. CD 11/3—ENR 11/11.

Nev., Elko — ROUNDHOUSE STALLS — Western Pacific Railroad Co., 526 Mission St., San Francisco, 5, Calif., T. L. Phillips, ch. engr., addnl. roundhouse stalls, to N. H. Sjoberg & Son, 5604 E. 16 St., Oakland, Calif. Est. $50,000.

N. J., Perth Amboy — PLANT BLDG. — General Cable Corp. 420 Lexington Ave., New York, N. Y., general interior and exterior alterations, cafeteria bldg., to Michael Riess & Co., 371 King George Rd., Fords, $45,000.

★**O., Cleveland** — FACTORY — Industrial Rayon Corp., H. S. Rivitz, pres., W 93 St. and Walford Rd., factory alterations, addns., to George A. Rutherford Co., 2721 Prospect Ave. Est. $500,000. Wilbur Watson & Associates, 4614 Prospect Ave., engrs. and archts.

Pa., Conway—ROUND HOUSE, etc.—The Pennsylvania R. R., J. L. Gressitt, ch. engr., Broad St. Station Bldg., 1617 Pennsylvania Blvd., Phila., 1 story, brick, timber round house exten. and turn table, at Conway Yards, to The Trimble Co., 1719 Pennsylvania Ave., Pittsburgh.

Pa., Greensburg—PLANT—American Glass Corp., M. L. Goldstein, vice pres., rebuilding 1 story, 25x80x100 ft. glass mfg. plant, brick, steel, to Westmoreland Constr. Co., 663 Pittsburgh St.

Wis., Milwaukee — STORAGE — Automatic Products Co., 3450 W. 32 St., Zone 10, 1 story 80x100 ft., structural steel storage bldg., to Gebhard-Berghammer, Inc., 5420 W. State St., Zone 8. H. H. Hay, 4115 N. Stowell Ave., Zone 11, archt.

OFFICIAL PROPOSALS

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(U. S. Government)

Public Roads Administration, Federal Works Agency, Arlington County, Virginia, December 15, 1943, SEALED BIDS will be received at the office of the District Engineer, Public Roads Administration, 1440 Columbia Pike, Arlington, Virginia, until 10:00 o'clock a.m. E.W.T., January 4, 1944, for the construction of Project Maryland DA NR 4-F(2), Access Road to Naval Powder Factory, Indian Head, Maryland, Prince Georges County. The approximate quantities of the more important items are as follows: 314,000 Cu. Yd. Excavation;

(U. S. Government)

3,670 Cu. Yd. Concrete; and 6,220 Lin. Ft. Concrete Culvert Pipe. Minimum rates of wages for laborers and mechanics on this project have been fixed by the Secretary of Labor as required by law. When plans and specifications are requested, a deposit of $10.00 cash, or certified check made payable to the Treasurer of the United States will be required to insure their return within 15 days after the opening of bids. Plans, specifications and proposal forms may be obtained at the address given above. H. J. Spelman, District Engineer.

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REINFORCING BAR Detailer & Draftsman. Location Southeast, with company operating over 4 states. Working conditions are good and living conditions average. Write stating experience, age, salary desired and small snapshot. P-61, Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

MASTER MECHANIC — progressive, active hard worker wanted by active live organization, imagination and ability to perform plus extensive experience all types construction equipment. Chronological history, salary expected—all information immediately. Reply P-69, Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

ENGINEER-ESTIMATOR for General Contracting organization specializing in utilities. Wonderful opportunity for the right man with young active progressive organization. Work at present South Seaboard Atlantic. All information first letter—experience, education, photograph, salary expected. Reply P-70, Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

POSITIONS WANTED

OPERATING ENGINEER: Mainly Construction of Highway Paving Concrete—Asphalt. Will accept national or international position. Available after December 2nd, 1943. PW- 27, Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

CONSTRUCTION SUPERINTENDENT with over twenty-five years experience on all kinds of work including defense housing now available, will leave town. Well recommended, good executive not afraid of hard work. Take complete charge or assist general superintendent. PW-42, Engineering News Record, 330 W. 42nd St., New York 18. N. Y.

GENERAL CONSTRUCTION FOREMAN or general carpenter foreman 35 years experience on all types of construction Power houses, Refineries, Hangars, etc. I can furnish A1 references. Will go anywhere. Have worked on defense project past 2½ years. PW-43, Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

SUPERINTENDENT CONSTRUCTION, twenty years industrial and high class finished projects. Eugineer. Anywhere. PW-44, Engineering News-Record, 330 W. 42nd St., New York 18. N. Y.

POSITIONS WANTED

GENERAL FOREMAN 25 years experience sewers, water lines, foundations, grading roads, heavy timber work and concrete. PW-49, Engineering News-Record, 330 W. 42nd St., New York 18. N. Y.

SUPERINTENDENT OR GENERAL FOREMAN, 30 years experience. Heavy grading, dams, dikes, Rail Road construction. Concrete and Black Top Pavement of all types, and heavy foundations work. Any location. PW 52, Engineering News-Record, 330 W. 42nd St., New York 18. N. Y.

MASTER DIVER: Available now. With or without gear. 20 years experience on all phases of underwater work. Reliable references if desired. Capable of taking charge of job. Go anywhere. PW-54, Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

GRADUATE CIVIL ENGINEER, Licensed. 9 years experience includes surveying, construction, hydraulic and structural design, water conservation problems, road and street work, estimating etc. Draft class 3-A. Immediately available. Prefer structural design. Location immaterial. PW-64, Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

ADMINISTRATIVE and ENGINEERING EXECUTIVE desires larger responsibilities in City Management field. Registered engineer, 25 years experience including power, water and sewerage plants; streets, sanitary sewer and storm sewer design and construction. If you need a practical administrator and post-war program write at once. PW-67, Engineering News-Record, 520 N. Michigan Ave., Chicago 11, Ill.

PROJECT MANAGER—seeks connection with construction firm, 18 years experience as contractor and work for others. Will go anywhere, domestic or foreign. Salary expectation, experience and references upon request. PW-71, Engineering News-Record, 330 W. 42nd St., New York 18. N. Y.

MASTER MECHANIC—Shovels and Cranes. Ten years experience as operator on general construction. Six years experience as field Service Engineer for large Shovel and Crane Manufacturer. Four years experience as Master Mechanic Truck mounted cranes. Just returned from foreign base work. Will go anywhere. PW-73, Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

EXECUTIVE ENGINEER. Age 46. Licensed. Broad experience responsible charge investigations, design, construction and operation of Hydro and Diesel electric plants, Water supply and conservation works, flood control, highways and industrial plants. PW-75, Engineering News-Record, 520 N. Michigan Ave., Chicago 11, Ill.

POSITIONS WANTED

ESTIMATOR-SUPERINTENDENT with Engineers and Architects, Defense and Hospital. Familiar all types construction and alterations. PW-72, Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

SUPERINTENDENT—ESTIMATOR: Graduate engineer with 25 years general construction experience. Now employed in middle west. Available about Jan. 1st. PW-74, Engineering News-Record. 520 N. Michigan Ave., Chicago 11, Ill.

CIVIL ENGINEER, 39, B.S., LL.B., New York License, admitted New York Bar. 7 years structural design, 2½ inspection, 1 computing 5 teaching, 1 topographical surveying and drafting. PW-76, Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

FIELD ENGINEER and Surveyor, 35, college graduate, 10 years experience in construction of industrial plants and housing projects, draft-exempt, desires responsible position by Jan. 15. PW-77, Engineering News-Record, 520 N. Michigan Ave., Chicago 11, Ill.

CONSTRUCTION SUPERINTENDENT, 44, considered amongst the best with excellent record of completions. Twenty years experience waterfront projects, difficult wet foundations, bridges, varied heavy concrete and steel structures. Projects of complicated detail and barrier. PW-78, Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

GENERAL CONSTRUCTION SUPERINTENDENT available January 1st. Excellent record and references furnished. Three years experience in foreign countries on large projects, location immaterial. PW-79, Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

CIVIL ENGINEER, '43 graduate. Age 2[illegible]. Draft status 4F. Three months Airport construction experience. Available now. P. [illegible] Smart, 49 Orchard St., Portsmouth, N. H.

WORK WANTED

EQUIPPED SURVEY PARTIES for all types of survey or construction work. Any location. Harwood, 258 Broadway, New York City.

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